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SUBSTANCE USE & MISUSE

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Drug Treatment: Explaining the Gender Paradox

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ABSTRACT

There is something of a gender paradox in drug user treatment. Research consistently indicates that women possess "risk factors" associated with drug use relapse, yet women are no more likely, and possibly less likely, to relapse to drug use. Efforts to explain this paradox involve a longitudinal study of 330 women and men participating in outpatient drug-user treatment associated with the evaluation of the Los Angeles Target Cities Project funded by the Center for Substance Abuse Treatment. The findings offer no support for the drug severity and social support hypotheses, but some support for the treatment engagement hypothesis. Specifically, women participate more frequently in group counseling which, in turn, lowers their rate of relapse in spite of having more "risk factors." Further analyses indicate that the greater participation of women in group counseling does not stem from child-custody or other gender differences in the reasons for entering treatment, nor does it result from the enhanced services associated with the Target Cities Project. Rather, the differences in treatment engagement for women and men may result from gender norms

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concerning help-seeking, personal independence, strength, and control. The treatment and policy implications of these findings and recommendations for further research are discussed.

INTRODUCTION

There is a gender paradox in the treatment of drug users. Research consistently indicates that women in drug-user treatment programs have more "risk factors" associated with relapse (de Leon, 1974; Root, 1989; Wallen, 1992; O'Hare, 1995; Wadsworth et al., 1995; Gil-Rivas et al., 1996), yet women are no more likely than men to relapse to drug use during and after treatment (Filstead, 1990; Wallen, 1992; Kosten et al., 1993; Grella et al., 1996). Some research indicates that women are even less likely than men to relapse (Greene and Ryser, 1978; Alford, 1980; Gil-Rivas et al., 1996).

While this paradox has been identified, it has yet to be explained. Explaining the paradox is important for at least two reasons. First, drug use and the treatment experience may not always be the same for women and men. Understanding why women are not more likely to relapse to drug use even though they possess many more "risk factors" will identify some of these differences—differences that could have important treatment implications for both women and men. Second, explaining the gender paradox could lead to a more complete understanding of the general phenomena of drug use, drug-user treatment, and relapse.

Although the gender paradox has not been a major focus of empirical research, the existing literature in drug use, professional help-seeking, and health services utilization suggests three likely explanations. The *drug use severity* hypothesis asserts that women are no more likely to relapse to drug use even though they hold a greater share of "risk factors" because the magnitude of their drug use is generally less than their male counterparts. The *social support* hypothesis holds that women are less likely to relapse to drug use because they have higher levels of social support which tends to facilitate recovery. Finally, the *treatment engagement* hypothesis proposes that women are less likely to relapse because they are more likely to stay in treatment and participate frequently in counseling and other services which increases their probability of maintaining abstinence at posttreatment. These explanations are, of course, not mutually exclusive. There is some empirical support for each of these hypotheses.

Drug Use Severity Hypothesis

There is evidence that women have less severe drug and alcohol use histories (as measured by the Drug Abuse Screening Test and the Alcohol De-

pendence Scale) than their male counterparts (Blume, 1986; Brown et al., 1995). Once in treatment, women report significantly less alcohol use and related problems (Hilton, 1988; Wilsnack and Wilsnack, 1993; O'Hare, 1995).

Not all of the studies indicate that women have less severe drug histories than men, however. Contradicting these findings are studies indicating that the history and present drug use of women in treatment may be at least as severe as that of men. Some studies find no difference in severity of crack use for women and men (Boyd and Mieckowski, 1990; Halinkas et al., 1994). Kosten and colleagues (1993) found that women used cocaine on more days during the month preceding treatment, were more likely to smoke rather than snort the drug, and reported more problems associated with their cocaine use. There is evidence, also, that women in treatment tend to be younger than men when they begin using drugs (Lex, 1994), and are more likely to describe the onset of their drug use as sudden, associated with a stressful event or experience, and quickly escalating to frequent or daily use (Beckman, 1975; Wilsnack, 1982; Herrington et al., 1987). Further, at least one study found that women are more likely than men to be polydrug users (Celentano and McQueen, 1984), and Ross (1989) concluded that women and men in alcohol treatment programs used similar levels of alcohol prior to treatment.

Social Support Hypothesis

It could be that women drug users typically have higher levels of social support than their male counterparts, and this support facilitates the recovery process. Indeed, women have higher levels of support from an variety of sources (Olson and Schutz, 1994). Women report stronger ties with their friends (Bell, 1991), and are more likely to utilize social support resources in a time of need (Burda et al., 1984; Chiriboga et al., 1979). Moreover, research indicates a strong pro-social network is associated with lower levels of drug use and relapse for both sexes (Hawkins and Fraser, 1987; Havassy et al., 1991; Johnsen and Herringer, 1993), and being married, employed, and having a strong pro-social network decreases the risk of drug use and relapse for female drug users (Clark and Midanik 1982; Johnsen and Herringer, 1993; Wilsnack and Wilsnack, 1993).

Again, there is research that contradicts the social support hypothesis. There is some evidence that chemically dependent women have fewer or no friends, and very limited social networks (Rhoads, 1983), poorer social functioning (Kosten et al., 1985), and greater family and interpersonal problems (O'Hare, 1993, 1995) compared to chemically dependent men. Further, female drug users are more likely to use drugs alone and in private (Reed, 1985; Marsh and Miller, 1985), have less social support from their families (Kingree, 1995), be in relationships with drug-misusing partners, and are less likely to have someone actively supporting them in treatment (Reed, 1985).

Treatment Engagement Hypothesis

Research consistently indicates that women are more likely than men to use virtually all health care services (Andersen, 1967; Cleary et al., 1982; Waldron, 1983; Corney, 1990; Rickwood and Braithwaite, 1994). Gender differences in utilization rates cannot be attributed to sex-specific biological factors such as pregnancy and childbirth (Corney, 1990; also see Verbrugge, 1982). Rather, it is speculated that the differences in help-seeking stem from differences in gender norms concerning personal independence, strength, and control (Phillips and Segal, 1969; Nathanson, 1975; Ashton and Fuehrer, 1993; Saunders et al., 1994). Women are also more likely to recognize psychiatric and emotional problems in themselves (Horwitz, 1977), show a greater readiness to define their problems in psychiatric terms (Kessler et al., 1981; Veroff et al., 1981), and are more likely to consult professionals for psychosocial problems of distress (Gove and Hughes, 1979; Corney, 1990; Ashton and Fuehrer, 1993; Rickwood and Braithwaite, 1994).

It not clear whether these findings can be generalized to the perceived need for drug-user treatment, or to the engagement in drug-user treatment, because female drug users may be an atypical group in this regard. Research on users of illicit drugs suggests that women have higher levels of psychiatric impairment and appear more deviant than men (Anglin and Hser, 1990). Further, women are no more likely than men to perceive the need for drug treatment (Longshore et al., 1993; Fiorentine and Anglin, 1994).

METHOD

This study is part of a larger research effort funded by the Center for Substance Abuse Treatment to evaluate the effectiveness of the Los Angeles site of the Target Cities Treatment Enhancement Project. The general goal of the Target Cities Project is to improve the accessibility and effectiveness of drug-user treatment in cities with severe drug problems. As one of the eight original cities participating in the program, Los Angeles was awarded approximately 4 million dollars per year to 17 outpatient programs, 2 perinatal service centers, and 5 community resource centers to enhance local treatment services for 3 years beginning in 1991. All of the 17 adult outpatient programs residing within the city limits received approximately $75,000 a year to increase the availability of counseling, provide additional educational and social activities, and refer clients to needed ancillary services.

To evaluate the enhancements, a quasi-experimental design involving a prospective longitudinal assessment of 330 clients in 26 outpatient drug-user

treatment programs in Los Angeles County was conducted. These outpatient programs included all 17 adult, publicly funded, outpatient programs within the Los Angeles city limits (Target Cities programs) and 9 adult outpatient programs outside the city limits but within the Los Angeles metropolitan area (comparison programs). The expected treatment duration of these programs was 6 months. The program services included group, individual, and family counseling, educational activities, and referrals to ancillary health and social services. About 55% of the sample completed treatment, 23% of the sample dropped out, and another 22% remained in treatment beyond the 6 month completion date.

Clients in the outpatient programs were administered a retrospective, longitudinal in-treatment interview and posttreatment interview using the UCLA Client-Needs-Services-Outcomes Questionnaire (CNSOQ). The CNSOQ was developed by the senior author, pretested on a small number of subjects participating in outpatient drug treatment, and modified to increase construct validity and ease of administration. The CNSOQ was administered by three female and one male interviewers having between one to seven years of experience interviewing drug users. The interviews were conducted at the specific treatment programs. Domains of the in-treatment instrument (Part I of the CNSOQ) included: 1) psychosocial background information, 2) barriers to treatment and treatment utilization, 3) treatment needs, 4) counseling regimen, 5) drug and alcohol use, 6) criminal activity, 7) family and social functioning, and 8) ancillary health and human service needs. In-treatment interviews were completed for 356 clients.

The posttreatment interview was conducted approximately 6 months after the in-treatment interview, corresponding to a posttreatment time interval of 2 to 5 months. Efforts were taken to track and locate all of the clients interviewed at baseline. When the client was located, his or her identity was verified from information privy only to the client and the interviewer. Once verified, the client was administered a 45-minute telephone interview (Part II of the CNSOQ), usually by the same interviewer who administered the in-treatment survey. Information domains of Part II of the CNSOQ included: 1) treatment needs, 2) services received, 3) drug and alcohol use, 4) criminal activity, 5) employment, vocational training, and education, 6) psychosocial functioning, 7) family functioning, 8) health status, and 9) pertinent psychological attitudes and constructs. A follow-up rate of 92% was achieved ($n = 330$).

The characteristics of the sample generally approximated those of clients participating in publicly-funded outpatient drug treatment programs in the Los Angeles metropolitan area (California Department of Alcohol and Drug Programs, 1994). The average age of first illicit drug use was 16, and the average age of regular use, defined as three or more times per week, was 20. The

primary drugs used in the year preceding treatment included crack (55%), marijuana (41%), cocaine (19%), methamphetamine (17%), heroin (11%), and PCP (11%). About half of those interviewed were polydrug users. Table 1 shows that about 41% were African-American, 26% were Latino, 30% were European-American, and about 2% were Asian or Native Americans. Approximately half were women and about 39% were employed at the time of the first interview. The age of participants ranged from 18 to 54 years with a majority of clients being under the age of 34.

Table 1.

Demographic Characteristics

	Percent total sample (n = 330)	Percent female (n = 182)	Percent male (n = 148)	
Ethnicity:				
Asian and Native American	1.8	2.2	1.4	
African-American	40.6	47.3	32.4	
European-American	31.2	26.4	37.2	
Latino	26.4	24.2	29.1	
Age:				*
18–24	7.6	6.0	9.5	
25–34	46.1	51.6	39.2	
35–44	35.8	35.7	35.8	
45 or older	10.6	6.6	15.5	
Educational background:				***
Less than high school	39.7	48.9	28.4	
High school	34.2	33.0	35.8	
Some college	26.1	18.1	35.8	
Employment:				***
Employed at first interview	38.9	28.6	52.7	
Living arrangements:				
Own home/apartment	20.3	19.2	21.6	
Living with friends or relatives	27.6	23.6	32.4	
Hotel/motel, shelter, or residential program	30.0	34.6	24.3	
Other arrangement	22.1	22.5	21.6	
Marital/relationship status:				
In a relationship at first interview	60.0	61.0	58.8	
Number of children:				***
None	23.0	12.1	36.5	
1 or 2	37.0	36.8	37.2	
3 to 9	40.0	51.1	26.4	

***$p < .001$.

*$p < .05$.

There were some gender differences in the sample. Women typically were younger, less likely to be high school graduates, older when they began using drugs regularly, more likely to use crack cocaine, less likely to be employed, and more likely to have children.

Consistent with other research, women in our sample were more likely than men to possess an array of psychological factors empirically associated with relapse to drug use, including anxiety, depression, and suicidal behavior, among others (Gil-Rivas et al., 1996). Not only did women possess more psychological factors associated with relapse, these factors were stronger predictors of relapse in women than in men. The right side of Table 2 lists the odds ratios for relapse for each factor computed from a logistic regression analysis. The odds of relapse for those experiencing depression within the 6 months prior to the follow-up interview (self-reported) was 2.67 for women but only 1.11 for men. Similarly, the odds of relapse for those ever attempting suicide was 2.55 for women compared to 1.90 for men. The only factor in which the odds of relapse are higher for men than women was anxiety in the 6 months prior to the follow-up interview. The odds of relapse for men was 1.78 compared to 1.03 for women.

Table 2.

Relapse Risk Factors by Gender

	Percent		Odds ratios of relapse[a]	
	Female (n = 182)	Male (148)	Female (182)	Male (148)
Depression—Lifetime	69.2	52.7**	1.21	0.36*[b]
Depression—Last 6 months[c]	24.2	22.3	2.67***	1.11
Anxiety—Lifetime	39.0	30.4	1.65	0.82
Anxiety—Last 6 months[c]	14.8	9.5	1.03	1.78*
Emotionally troubled—Last 6 months[c]	49.5	36.5*	1.29	0.72
Diagnosed mentally ill	9.9	6.1	1.96	0.76
Ever contemplated suicide	50.0	36.5*	0.62	0.56*
Ever attempted suicide	33.5	13.5	2.55**	1.90
Attempted suicide in last year	8.8	2.7***	0.87	0.70

[a]Computed from logistic regression analysis with simultaneous variable entry.
[b]Tests of significance computed from regression coefficients.
[c]Six months from posttreatment follow-up interview.
***$p < .001$.
**$p < .01$.
*$p < .05$.

Yet, paradoxically, women in our sample were not more likely to relapse to drug use in spite of having more psychological risk factors. On the contrary, they were slightly less likely to return to drug use after entering treatment. Only 22% of women compared to 32% of men ($p < .05$) relapsed to drug use in the 6 months prior to the posttreatment follow-up interview.

Table 3 summarizes the hypotheses, variable operationalization, and presumed causal effect of each of the three explanations of the gender paradox. Again, it should be pointed out that these explanations are not mutually exclusive.

FINDINGS

Drug Severity Hypothesis

If the drug severity hypothesis explains the gender differences in relapse at posttreatment, then the drug use of women in the year preceding treatment should be lower than that of men. Yet the findings listed in Table 4 indicate that women were as likely as men to use virtually all drugs with the exception of crack. But women were *more* rather than less likely to use crack. Sixty-five percent of women compared to 42% of men used crack in the year preceding treatment.

Although women used drugs as much or more than men, it could be that they used these drugs less frequently. Again, the findings do not support this contention. Women used all drugs just as frequently as men, and they used crack and heroin more frequently. Women used crack approximately 5.4 days per week in the year preceding treatment compared to 4.6 times for men, and women used heroin 6.7 times per week in the year preceding treatment compared to 5.2 times for men. Nor are women less likely to drink large amounts of alcohol. Women had six drinks or more in 7.8 days out of the 30 days prior to entering treatment compared to 7.5 days for men.

Finally, it may be that women are less likely to be polydrug users. Again, the findings contradict this assumption. Table 4 shows that about 50% of both females and males confined their drug use in the year preceding treatment to a single drug, about 29% of both genders used two drugs, between 10 to 16% used three drugs, and fewer than 10% used four or more drugs.

As women in this sample have at least as severe, and possibly more severe, use of drugs in the year preceding treatment, it is not likely that the drug use severity hypothesis explains the gender differences in relapse, unless, contrary to expectation, more severe use of crack and heroin are associated with lower levels of relapse. One way to determine this would be to conduct a logistic regression analysis in which the severity of crack and heroin use are entered in step 1, and gender is entered in step 2. If the severity of drug use

Table 3.

Explanations of the Gender Paradox

Explanation	Hypothesis	Operationalization[a]	Presumed casual effect
Drug use severity	Women have lower levels of chemical dependence compared to men.	Frequency of pretreatment drug use. Polydrug use.	Higher levels of drug dependence have a more powerful effect on relapse risk than psychological factors. Women have lower levels of drug dependence and are less likely to relapse in spite of having more psychological risk factors.
Social support	Women have higher levels of social support compared to men.	Perceived quality and duration of relationship with significant other(s). Extent of involvement in social network.	High levels of social support reduce the probability of relapse. Women generally have higher levels of support than do men, which mitigates the psychological risk factors.
Treatment engagement	Women are more likely than men to participate in drug-user treatment.	Number of weeks involved in treatment during 6-month treatment period. Monthly frequency of participation in counseling, 12-step meetings.	High levels of treatment participation are associated with cognitive and behavioral changes involved in recovery. The psychological relapse risk factors are mitigated by the positive effects of treatment participation.

[a]Utilized in the current study. Other methods of operationalization may be adequate or superior.

Table 4.

Gender Differences in Drug Use Severity and Relapse

	Percent used in year Prior to treatment		Mean frequency of use	
	Female (n = 182)	Male (148)	Female (182)	Male (148)
Crack	65.2	41.9***	5.4	4.6*
Marijuana	37.6	45.9	3.9	4.3
Coke	16.0	23.6	4.6	4.5
Methamphetamine	16.0	18.9	5.1	4.0
Heroin	8.8	13.5	6.7	5.2*
PCP	13.3	8.8	4.0	3.8
Barbiturate	7.7	6.1	2.5	4.3
Other	5.1	5.0	1.7	1.8

Number of drugs used regularly in year preceding treatment	Percent polydrug use	
	Female (n = 182)	Male (148)
1	51.1[a]	48.7[a]
2	29.1	29.7
3	10.4	16.2
4	7.1	4.1
5	2.1	1.4

Logistic regression analysis: Drug use relapse with drug use severity and gender (n = 330)

Step 1: Drug use variables entered
Model chi-square improvement 1.33 (df = 3)
Step 2: Gender entered
Model chi-square improvement 3.72 (df = 1)*

Step 2 coefficients	B	S.E.
Used crack in previous year	.25	.23
Mean days per week crack use	-.07	.08
Mean days per week heroin use	.01	.06
Gender	-.25	.13*
(Constant)	-.85	

[a]Percent may not sum to 100 due to rounding.
***p < .001.
*p < .05.

"explains" the gender difference in relapse, then entering the indicators of drug use severity in step 1 would lead to an improvement in chi-square (over the constant), but entering the gender in step 2 would not lead to an improvement in chi-square. The results of such an analysis, listed in the bottom section of Table 4, indicate that entering the drug severity variables in step 1 does not lead to an improvement in chi-square. Entering gender in step 2, however, leads to a statistically significant improvement in chi-square, and the coefficient for gender is statistically significant. None of the drug severity indicators included in step 2 is statistically significant. These findings suggest that the drug severity hypothesis is not an adequate explanation of the gender differences in relapse.

Social Support Hypothesis

If the social support hypothesis explains the gender difference in relapse, then women would be more likely to be in a committed relationship, have a network of family and friends, and possibly be employed at posttreatment. The findings indicate mixed support for these assumptions. Table 5 shows that women were significantly less likely than men to be employed. Nearly 29% of women compared to 47% of men were employed at posttreatment. Nor were women more likely than men to be married or involved in an intimate relationship at posttreatment. Women were no more satisfied with their current intimate relationships than were men, nor was the duration of their current relationship longer. Women in outpatient drug treatment were, however, more likely to maintain a social network. They were more likely to talk about their deepest problems with someone and more likely to receive help from a family or friends with transportation, errands, or "fixing things." But women were not more likely than men to receive encouragement from family or friends with their problems, receive encouragement to stop using drugs, or say they could often count on family and friends to help them in an emergency in the middle of the night.

Similar to the analysis conducted for the drug use severity hypothesis, if social support "explains" the gender difference in relapse, then entering the social support indicators in step 1 would lead to an improvement in chi-square, and entering gender in step 2 would not lead to an improvement in chi-square, nor would the coefficient be statistically significant. The results of such an analysis, listed in Table 5, show that entering the social support variables in step 1 does not lead to an improvement in chi-square. Entering gender in step 2, however, leads to a statistically significant improvement in chi-square, and the coefficient remains statistically significant. None of the social support indicators entered in step 2 is statistically significant. Similar to the drug severity

Table 5.

Gender Differences in Social Support and Relapse

	Female (n = 182)	Male (148)
Currently employed at posttreatment follow-up	28.6	47.3***
Marital/intimate relationship:		
Currently married, or involved in intimate relationship	61.0	58.8
Mean months involved in relationship	29.1	37.9
Satisfaction with relationship (of those involved):	(n = 111)	(87)
Very satisfied	55.9	57.5
Somewhat satisfied	32.4	29.9
Somewhat or very dissatisfied	11.7	12.6
Social support:		
Talk about deepest problems with at least some of your family and friends	43.4	33.1*
Receive help or encouragement from family or friends with problems	71.4	69.6
Encouragement from family or friends to stop using drugs	58.8	53.4
Help from family or friends such as transportation, errands, or fixing things	62.1	48.0**
Can count on family and friends to help you in an emergency in the middle of the night	68.7	69.6

Logistic regression analysis: Drug use relapse with social support and gender (n = 330)

Step 1: Social support variables entered
Model chi-square improvement 2.21 (df = 3)
Step 2: Gender entered
Model chi-square improvement 4.66 (df = 1)*

Step 2 coefficients	B	S.E.
Currently employed	−.20	.14
Talk about deepest problems with family or friends	−.10	.13
Help from family or friends	−.01	.13
Gender	−.28	.13*
(Constant)	−1.10	

***p < .001.
**p < .01.
*p < .05.

hypothesis, these findings indicate that the gender difference in relapse cannot be explained by differences in social support.

Treatment Engagement Hypothesis

If the treatment engagement hypothesis explains the gender difference in relapse, then women would spend more weeks in treatment, participate more frequently in counseling, and possibly begin, or continue, 12-step participation after treatment. The frequency of client participation in counseling varied considerably—ranging from 2.5 to 72.0 times per month, with a mean of 22.5. Participation for a majority of clients ranged from about 10 to 35 sessions per month (one standard deviation). Group counseling, generally "mixed-sex," was the most frequently attended type of counseling, averaging 9.5 times per month, followed by 12-step meetings (7.5 times per month), and individual counseling (4.7 times per month). Family counseling was a less utilized form of counseling (0.7 times per month). The length of each group and family counseling session averaged about 1 to 1-1/2 hours, and individual counseling typically lasted about 1/2 to 1 hour. Twelve-step meetings typically lasted 2 hours or more.

Table 6 indicates that women did not spend more weeks in treatment than did men. Nor were women more frequent attendees of 12-step meetings during the posttreatment intervention, or more likely than men to have a sponsor. Yet consistent with the treatment engagement hypothesis, women were more likely to engage in group counseling. Women averaged almost 11 sessions per month compared to less than 8 sessions a month for men ($p < .001$). Women did not, however, participate more frequently in individual counseling, family counseling, or attend more 12-step meetings while in treatment.

If the differences in the participation in group counseling explain the gender difference in relapse, then entering gender in a subsequent step in a logistic regression analysis would not lead to an improvement in chi-square, nor would the coefficient be statistically significant. The results of such an analysis, listed in Table 6, show that entering group counseling frequency in step 1 leads to an improvement in chi-square ($p < .05$). Entering gender in step 2, however, does not lead to a statistically significant improvement in chi-square, nor is the coefficient statistically significant. The step 1 equation, which includes only the frequency of group counseling, accurately predicts the probability of relapse in 74% of the cases. Including gender with group counseling in the step 2 equation does not increase the number of cases in which the probability of relapse is accurately predicted. These findings, then, offer support for the treatment engagement hypothesis. They indicate that women are less likely than

Table 6.

Gender Differences in Treatment Engagement and Relapse

	Female (n = 182)	Male (148)
Mean total weeks in treatment	35.6	33.4
In-treatment counseling frequency (monthly average):		
Group counseling	10.9	7.9***
Individual counseling	4.7	4.8
Family counseling	0.8	0.6
12-Step	7.7	7.1
Posttreatment 12-step meetings:		
12-Step meetings (monthly average)	6.8	6.5
Have sponsor (percent)	37.9	29.9

Logistic regression analysis: Drug use relapse with treatment engagement and gender (n = 330)

Step 1: Counseling frequency entered
Model chi-square improvement 10.55 (df = 1)***
Step 2: Gender entered
Model chi-square improvement 1.72 (df = 1) (ns)[a]

Step 2 coefficients	B	S.E.
Group counseling frequency	-.08	.02***
Gender	-.17	.13 (ns)[a]
(Constant)	-.36	

[a]ns = not significant.
***p < .001.

men to relapse to drug use because they participate more frequently in group counseling.

FURTHER ANALYSES: EXPLORING WHY WOMEN ARE MORE LIKELY TO ENGAGE IN TREATMENT

Similar to the findings concerning gender differences in heath care services, women in drug-user treatment programs are more likely than men to engage in the treatment process, and consequently, less likely to relapse to drug use even though they possess more risks for relapse. Toward the goal of a more comprehensive understanding of the phenomenon, an important question involves why women are more likely to engage in the treatment process. As

purported by some, the answer could reside in the differences in gender norms concerning help-seeking, personal independence, strength, and control. The findings that women engage more frequently in virtually all health care services is consistent with the "gender" explanation. If this is the case, then the policy implications revolve around targeting the clients' conception of appropriate behaviors for women, and particularly for men, that may facilitate or impede treatment engagement.

But the gender differences in treatment engagement could result from at least two other sources that would suggest quite different policy and treatment implications. First, women with drug-use-associated problems are more likely than their male counterparts to be primary caregivers to children. It may be that women and men enter drug-user treatment for different reasons. Men may be more likely to enter drug-user treatment because of legal mandates and, possibly, the desire to change a drug-using lifestyle, while women may be more likely to enter treatment in order to maintain legal custody of children. Rather than gender norms or some other explanation, the increased participation of women in group counseling could simply reflect gender differences in the reasons for entering treatment. If women are more likely to participate in treatment (and thus less likely to relapse) because they are concerned about maintaining custody of their children, then the frequently used policy of making custody conditional on entering and staying in drug treatment for some time is an effective strategy for reducing drug use among women with children.

Second, the Target Cities intervention provided child care, transportation, and other services with the express purpose of attracting and retaining more women in treatment. If the gender differences in treatment engagement could be the consequences of the Target Cities intervention, then the program components associated with this increased engagement could be duplicated in other programs with the same desirable consequences.

In view of the substantive and policy importance of these questions, further analyses are necessary. The analyses need to center on the possible effects of the reasons for entering treatment and the effects of Target Cities intervention on gender differences in the engagement in treatment.

Reasons for Entering Treatment

Each subject was asked to state their primary reason for entering treatment. The findings listed in Table 7 indicate that women and men entered treatment for slightly different reasons. There were no differences in the percentage of women and men who said they entered treatment out of a desire to change a drug using lifestyle, or to avoid or eliminate health problems. Women were, however, less likely than men to say that family and interpersonal problems were important reasons for entering treatment, although this was not a fre-

Table 7.

Gender Differences in Reasons for Entering Treatment and Frequency of Group Counseling

Primary reason for entering treatment	Female (n = 182)	Male (148)	Mean frequency of group counseling (330)
Desire to change lifestyle	69.8	67.6	8.7
Health problems	2.7	3.4	7.8
Family and interpersonal problems	0.5	4.1*	5.1*[a]
Desire to avoid losing custody or to gain custody of children	19.2	6.1***	10.1*
Criminal justice related	6.6	14.2*	8.3
Other	1.1	4.7	7.6

Regression analysis: Frequency of group counseling with gender and reasons for entering treatment (n = 330)

	Model 1 beta	Model 2 beta
Gender (Female = 1, Male = 0)	-.23***	-.21***
Family and interpersonal reasons	—	-.08
Custody reasons	—	0.7

[a]t-Test comparison of means between the specific reason for entering treatment and all other reasons for entering treatment.

***$p < .001$.

*$p < .05$.

quently mentioned reason for either sex. Less than 1% of women compared to slightly more than 4% of men said that family or interpersonal problems were the primary reasons for entering treatment.

More importantly, perhaps, those who entered treatment because of family or interpersonal problems participated in group counseling less frequently (average 5.1 times per month, $p < .05$) than those who entered treatment for other reasons. Women were also less likely to have entered treatment because of criminal justice reasons (legal mandates, condition of parole or probation). Less than 7% of women compared to 14% of men said that criminal justice issues were the primary reasons for entering treatment. But those who entered for these reasons were not more or less likely to participate in group counseling.

Consistent with the speculation that women are more likely to enter treatment because of child custody issues, more than 19% of women compared to 6% of men said that the desire to gain or avoid losing custody of children was the primary reason for entering treatment. Moreover, those who said that custody was the primary motivation to enter treatment were significantly more likely to participate in group counseling (10 to 1 times per month, $p < .05$) than those who entered for other reasons.

Do the gender differences in the interpersonal and child custody reasons for entering treatment account for the higher frequency of participation in counseling for women? The regression analysis listed in the bottom section of Table 7 offers evidence to the contrary. Regressing the frequency of counseling on gender in model 1 reveals a beta coefficient of –.23. Entering interpersonal and custody reasons for entering treatment in model 2 does not significantly reduce to magnitude of the gender coefficient, nor are the coefficients for the reasons for entering treatment statistically significant. Gender differences in the interpersonal and child custody reasons for entering treatment do not account for the higher frequency of participation in counseling for women.

Target Cities Intervention

If the Target Cities Intervention was responsible for increasing the treatment engagement of women, then we could expect to see a higher percentage of women and a higher mean frequency of participation in group counseling in Target Cities programs. Table 8 indicates that this is the case. Women ac-

Table 8.

Program Type, Gender, and Counseling Frequency

	Program type (percent)	
	Target Cities programs (n = 208)	Comparison programs (122)
Percent female	62.0	43.4***
Mean frequency of group counseling	10.9	7.3***

Regression analysis: Frequency of group counseling with program type and gender

	Model 1 beta	Model 2 beta
Gender	–.23***	–.27***
Program type (Target Cities = 1, Comparison = 0)	—	–.18***

***$p < .001$.

counted for 62% of the clients in the Target Cities programs compared to about 43% in the comparison outpatient programs. Further, the mean frequency of group counseling was nearly 11 in Target Cities programs compared to about 7 in comparison programs.

The Target Cities intervention, therefore, could explain the higher frequency of participation in counseling treatment—but does it? The regression analysis listed in the bottom section of Table 8 indicates that it does not. Entering program type into model 2 does not reduce the magnitude of the gender coefficient (beta = −.23). In fact, it slightly increases the coefficient to −.27, indicating that there is a slight interaction between gender and program type. More importantly, however, the coefficient for program type remains statistically significant, indicating that gender and program type independently increase the frequency of participation in group counseling. The gender differences in counseling frequency, therefore, are not explained primarily by the Target Cities intervention.

CONCLUSIONS

Toward the goal of explaining the gender paradox in drug-user treatment, this study found no support for the drug severity or social support hypotheses. It did, however, find support for the treatment engagement hypothesis, in that women participate more frequently in group counseling. As more frequent participation in group counseling is associated with lower rates of relapse to drug use, women are less likely than men to relapse to drug use even though they possess more risk factors empirically associated with relapse.

Further analyses indicate that the greater engagement of women in drug-user treatment does not stem from child custody or other reasons for entering treatment, nor does it result from the enhanced services associated with the Target Cities project. Although this study can demonstrate that treatment engagement is a primary reason why women in outpatient drug-user treatment programs are less likely to relapse to drug use, it cannot explain why women are more likely than men to engage in treatment. Yet, because women are more likely than men to engage in virtually all health care services in the United States, the underlying cause is likely to reside in the differences between women and men rather than in the programs themselves. The "gender explanation," which attributes the differences in the utilization of health care to gender norms concerning help-seeking, personal independence, strength, and control, is a cause that resides in the differences between women and men and could account for the more frequent participation of women in group counseling.

It should be noted, however, that the gender explanation is culturally and temporally specific. Other societies that do not have the same gender norms

as the United States in the 1990s may not have the same gender paradox in treatment, and gender norms might not be an appropriate explanation for a treatment paradox, if one were to exist.

But if it is true that gender expectations are the underlying reasons why women are more likely to engage in drug-user treatment, then this would point to another side of gender—at least for women and men in drug-user treatment programs. One side of gender is that women who enter drug-user treatment programs are more likely than men to be victims of sexual and physical abuse which results in higher levels of PTSD, depression, anxiety, and suicidal behavior, and possibly other factors that increase the risk of relapse (Gil-Rivas et al., 1996). Another side of gender is that women with drug-use-associated problems who enter treatment are more likely to engage in treatment which reduces the actual rate of relapse.

Several policy considerations are suggested by these findings. One involves the effect of frequent counseling. The findings offer support for the widely held contention of drug-user treatment providers that regular and frequent counseling increases the effectiveness of drug-user treatment for both women and men. Findings reported elsewhere (Fiorentine and Anglin, 1996a) indicate that for both group and individual counseling, some is good and more is better. Treatment providers and funding agencies may want to rethink what constitutes an appropriate level of client contact. One or two group counseling sessions along with one individual counseling session per week, often viewed as an appropriate level of contact, will not be as effective as two, three, or more group and individual counseling sessions per week.

Further, increasing the availability of counseling will increase client participation in counseling which, in turn, will increase the overall effectiveness of outpatient treatment (Fiorentine and Anglin, 1996b). Even minimal increases in counseling opportunity may result in relatively impressive gains in treatment effectiveness. Clients in Target Cities programs, for example, averaged approximately 4 more group counseling and 1 more individual counseling session per month than clients in comparison programs, yet the rate of drug use in the 6 months prior to the follow-up interview was about 40% lower (Fiorentine and Anglin, 1996b).

Two other policy considerations involve gender differences in counseling participation. The increased participation of women in counseling suggests that they would be more likely than men to participate in, and benefit from, more intensive treatment plans. This is a logical inference, but it may not be empirically supported. Findings from this study indicate that the increase in group counseling between the Target Cities programs (with a more intensive counseling regimen) and the comparison programs were only slightly higher for women compared to men. Women in Target Cities programs averaged 12.0 group counseling sessions per month compared to 8.4 for women in compari-

son programs ($p < .001$), whereas men in Target Cities programs averaged 9.1 compared to 6.4 in comparison programs ($p < .001$).

Finally, if gender expectations facilitate the treatment engagement of women, then, logically, they also impede the treatment engagement for men. Treatment providers should be aware of this and possibly add a component to their treatment plan that discusses how expectations concerning masculinity, particularly normative expectations involving help-seeking, independence, and control, tend to impede treatment engagement and increase the probability of relapse to drug use.

The findings also suggest the need for further research. It is necessary to systematically examine the causes, correlates, and consequences of client participation in treatment. Understanding why some clients are "vigilant" participators in treatment, while others are infrequent participators, and still others drop out of treatment prior to the scheduled completion date, remains one of the most pressing questions in drug treatment research. Research should focus on both client and program characteristics associated with the greater frequency and duration of treatment participation.

An equally pressing question involves understanding the intermediary effects of treatment engagement that accounts for lower levels of posttreatment drug use and other treatment-related outcomes. It is necessary to move beyond the "black box" by understanding *how* and *why* treatment engagement increases the probability of positive treatment outcomes. Research should focus both on the cognitive and attitudinal changes as well as behavioral or lifestyle changes associated with high levels of treatment engagement.

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RESUMEN

Entre los generos masculino y femenino existe algo parecido a una paradoja en el tratamiento de la drogadición. Las investigaciones indican de una manera consistente, que las mujeres presentan más factores relacionados con la recaída al uso de las drogas que los hombres, siembargo, la probabilidad de que las mujeres regresen al uso de las drogas no es mayor, y probablemente es menor que en el caso de los hombres. Los esfuerzos que se llevarón acabo para explicar está paradoja, incluyen un estudio longitudinal de 330 hombres y mujeres que participaron en programas ambulatorios de tratamiento relacionados con la evaluación del Proyecto de Target Cities en Los Angeles, el cuál fué fundado por el Centro para el Tratamiento de la Drogadición. Nuestros resultados no ofrecen apoyo para las hipothesis relacionadas con la severidad de la drogadición y el apoyo social, pero ofrecen un poco de apoyo para la hipóthesis del nível de participación en el programa de tratamiento. Específicamente, las mujeres participarón con mayor frequencía en consejería de grupo, lo cuál resultó en níveles de recaída al uso de las drogas menores. Análisis más extensivos indican que el mayor nível de participación en consejería de grupo por parte de las mujeres no es debé a presiones legales relacionadas con la custodía lde sus hijos, o ha diferencias en las razones que los hombres y las mujeres tenían para iniciar tratamiento, ni son el resultado de los servicios intensivos asociados con el Proyecto de Target Cities. Si no que, la diferencía en el nível

de participación entre los hombres y las mujeres, es el resultado de normas relacionadas con la busca de ayuda, independencia personal, fuerza y control para cada uno de estos generos. Se discute lo que estos resultados significan para el area de tratamiento y desarrollo de polizas.

RÉSUMÉ

Il y a un certain paradoxe de la différence entre les deux sexes dans le traitement pour l'usage abusif de stupéfiants. La recherche indique uniformément que les femmes ont plus de facteurs de risques qui sont associés à la rechute dans l'usage de drogues; or, il n'est pas plus probable, et il est peut-être moins probable, que les femmes rechutent dans l'usage de drogues. L'effort pour expliquer ce paradoxe entraîne une étude longitudinale de 330 femmes et hommes qui participent au traitement de l'usage de stupéfiants en service hôpitalier ambulatoire en association avec l'évaluation du projet de Los Angeles Target Cities, qui est financé par le Center for Substance Abuse Traitement (Centre pour le Traitement pour l'Usage Abusif de Drogues). Les résultats de ces recherches n'appuyent pas les hypothèses de la gravité de la drogue utilisée et du support social, mais elles appuyent quelque peu l'hypothèse du niveau d'intérêt à se faire traiter. Précisément, les femmes participent plus fréquemment à la thérapie de groupe, ce qui baisse, à tour de rôle, leur taux de rechute, malgré le fait qu'elles ont plus de facteurs de risque. Des analyses complémentaires indiquent que la participation plus fréquente des femmes à la thérapie de groupe n'est ni à cause de la garde d'enfants ni d'autres différences entre les deux sexes, ni de la supériorité des services du projet de Target Cities à l'égard des raisons pour lesquelles les femmes commencent le traitement. Plutôt, les différences dans le niveau d'intérêt à se faire traiter pour les femmes et les hommes est peut-être résultat des normes régissantes la différence entre les deux sexes en ce qui concerne la recherche d'aide, l'indépendance personelle, la puissance et le contrôle. On traite de ce que ces résultats impliquent en matière traitement et de ligne de conduite.

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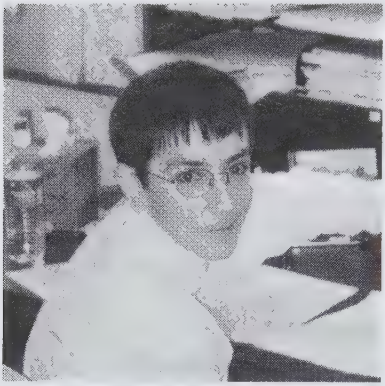

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A "Parliamentary Inquiry" into Alcohol and Drugs: A Survey of Psychoactive Substance Use and Gambling among Members of the Dutch Parliament

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ABSTRACT

In the fall of 1994 a survey was conducted on the use of alcohol and drugs and on gambling among members of the Dutch parliament. The survey indicated that almost two-thirds of the representatives sampled supported legalization of marijuana. A smaller majority (57%) was in favor of reducing the number of coffee shops selling marijuana. At least a quarter of the members of parliament had used marijuana themselves at one time or other. Alcohol consumption could be said to be "excessive" or "very excessive" for nearly 10% of the members of parliament. In general, the nature and extent of the parliamentarians' substance use was comparable to that in the Dutch general population.

Key words. Alcohol use; Drug use; Gambling; Politicians

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INTRODUCTION

In the past decades there has been a multitude of surveys on the prevalence of alcohol and/or drug use among the general population or its subpopulations (treatment samples, adolescents, women, etc.). A large part of epidemiological research has been aimed at identifying "risk factors" that may be linked to the excessive use of alcohol and/or drugs or to alcohol and drug addiction.

With the formulation of the dependence syndrome as a biopsychosocial phenomenon (Edwards et al., 1981), there has been increasing acknowledgment that addiction and the excessive use of psychoactive substances represent heterogeneous processes in terms of their antecedents, concomitants, and consequences. Scientists of various disciplines now agree that one-dimensional cause-and-effect paradigms in the addiction field are too limited in their scope. In the field of substance use epidemiology, there has been increasing awareness that the term "risk factor" refers to only one of the many factors that—in interaction—*may* render a person "vulnerable" to excessive substance use or addiction.

Given this multifaceted complexity, many surveys have focused on imputed identified risk groups in a more general sense (such as adolescents), while some have been aimed at very specific groups that may have an increased risk with respect to excessive alcohol and/or drug use. An example of the latter are surveys of the nature and extent of psychoactive substance use among specific occupational groups, such as medical doctors, truck drivers, and pilots (see, for example, Hughes et al., 1992). In these studies, not occupation per se but factors often associated with the profession are viewed as potential contributors to the onset of excessive substance use. For example, it has been assumed that medical doctors represent a special risk group in view of their easy access to psychoactive substances, their detailed knowledge about psychoactive drugs, their frequent contact with addicts, and the high level of stress often inherent to their profession (Brooke et al., 1991; McAuliffe et al., 1986; Roy, 1987).

In the summer of 1994 the Addiction Research Institute Rotterdam (IVO) was approached to conduct a survey on the prevalence of psychoactive substance use and gambling among a very specific group indeed: the present members of the Dutch parliament. The objective of this survey was to gain insight into the extent of the use of tobacco, alcohol, drugs, and psychoactive medicine, and participation in various forms of gambling by members of parliament. In addition, the survey aimed at gaining insight into the representatives' knowledge of aspects of alcohol consumption and/or drug use. Furthermore, the

study attempted to sound out the opinions of the members of parliament on a number of possible policy measures.

The members of parliament were approached by mail immediately following parliament's summer recess and the subsequent change of government and changes in the constitution of the parliament. Despite the fact that the speech from the throne and the discussion of the budget took place in that very period, the completed questionnaires were returned to IVO surprisingly quickly.

This paper successively enters into the nature and extent of psychoactive substance use and gambling among the members of parliament sampled, their knowledge of substance use, and their opinion on possible policy measures. The association between these three aspects is discussed next. To conclude, the results emerging from this survey are compared with those from a similar survey among all Dutch (Rotterdam) population. It should be noted that when this paper mentions "the" or "all" members of parliament, it refers to those participating in the survey.

Dutch Policy on Alcohol, Drugs, and Tobacco

The Netherlands is internationally known for its presumed "liberal" approach to drug use (Wijngaart, 1991; Grapendaal et al., 1995). There is, however, no question of a "laissez faire" attitude in the Dutch policy on drugs. The Dutch approach is probably best described as pragmatic (NIAD, 1995a, 1995b). It can be characterized as one acknowledging the fact that drug use is a reality in society while at the same time taking measures to minimize the harmful effects of drugs on the user, his environment, and society (Ministry of Health, Welfare, and Sports, 1994; Ball and van de Wijngaart, 1994) to the fullest extent. An example of the steps the Dutch government takes to find the right balance between the different types of policy measures is the Dutch approach to marijuana. The Dutch Opium Act (Ministry of Justice, 1976) makes a clear distinction between "drugs representing unacceptable risks" (heroin, cocaine, amphetamines, etc.), and "hemp products," which is aimed at maintaining a clear-cut separation between the markets of these two classes of drugs. While possession and trafficking of any of these drugs is prohibited by law and liable to punishment, low priority is given to possession and sale of small amounts of cannabis products. In actual practice this has led—among other things—to the existence of so-called coffee shops (see, for example, Korf, 1995), where the sale of cannabis products is tolerated within certain restrictions (only amounts below 5 grams, no sale of "hard drugs," no advertising, no encouragement, and no sale to minors) (NIAD, 1995a).

As for the Dutch policy on alcohol, the differences between the Netherlands and other countries are less apparent. As in many European countries,

the Dutch policy on alcohol is focused on the demand part and is primarily aimed at education, treatment, and the prevention of excessive drinking and driving while intoxicated (Harkin et al., 1995). For example, it is prohibited under Dutch law for a person to drive when his blood alcohol level exceeds 0.05%.

As far as the supply side is concerned, producers and distributors of alcohol are more or less in a position to apply self-regulation measures (van Iwaarden and van Os, 1988). For example, advertising alcohol is allowed although it is subject to certain regulations. Since 1990 the Netherlands has had a "Code for Alcohol-containing Beverages" (STIZA, 1990) which has been agreed upon by all organizations involved in the production and distribution of alcoholic beverages in the Netherlands. Nevertheless, the Netherlands does have national legislation in relation to the sale of alcohol, which includes such measures as taxation of alcohol, prohibition of the sale of alcohol to minors, and restrictions on types of outlets where alcohol-containing beverages can be bought (Harkin et al., 1995). In addition, many cities in the Netherlands have developed a local policy on the sale of alcohol to—among other things—limit the sale of alcohol in places such as sports clubs and community centers.

With respect to the Dutch policy on tobacco, this is again characterized by a general lack of national regulations. Advertising tobacco in newspapers and on television is not allowed, whereas it is allowed in cinemas. It is, however, a statutory requirement to add a health warning in this kind of advertising (Foundation of Health and Smoking, 1987, 1994). In many Dutch cities, smoking is increasingly restricted in public places (public transport, post offices, schools, etc.). The catering industry is also required to have nonsmoking accommodation.

METHOD

The data of the survey were gathered by means of a short questionnaire, mailed to members of the Dutch parliament (see Appendix 1). It was based on a questionnaire used in earlier epidemiological studies on alcohol and drug use in the general population of Rotterdam (Garretsen, 1983; Garretsen et al., 1993). The questions focused on the use of coffee, tobacco, alcohol, marijuana, "hard drugs," and psychoactive medicine, and participation in various forms of gambling. In addition, a number of questions were included in relation to the level of knowledge among the members of parliament regarding aspects of alcohol and/or drug use. To conclude, the questionnaire set out to document the opinions of the members of parliament on certain measures regarding policy on tobacco, alcohol, drugs and games of chance.

Whenever a survey deals with "sensitive" issues—which certainly includes information on the use of alcohol and illegal drugs—great attention should be paid to the way in which the sample group is approached in relation to the characteristics of the sample group. For instance, surveys on sensitive issues are generally believed to produce (intentional or unintentional) underreporting of the phenomenon under study (Pernanen, 1972; Knibbe and Swinkels, 1994), and measures should be taken to minimize the extent to which this may occur. Alcohol research has indicated that the consumption of alcohol reported in surveys and actual sales figures of alcohol (which are considered to be reliable) tend to differ substantially. Research abroad has shown that only 30 to 70% of the alcohol sold is actually reported in population surveys (Pernanen, 1974). Research in the Netherlands has shown that approximately half of the amount of alcohol-containing beverages sold in the Netherlands is reported in surveys (Knibbe and Swinkels, 1992).

Although there is some evidence that the degree of anonimity offered to the respondent does not lead to differential responses using various types of assessment techniques (Bradburn and Sudman, 1979; Werch, 1990; Duffy and Waterton, 1984), the majority of reliability studies in the field of alcohol and drug use indicate that anonimity does reduce social desirability response bias (O'Malley et al., 1983; Johnston, 1985). In addition, there is evidence that response bias is a function of complex processes including the respondent's motivation, the retrieval process, the comprehension of the question, and the way the demand characteristics are structured so that accurate responding is perceived by the respondent as the primary task (Babor et al., 1987). Other examples to reduce underreporting include "consistency checks" in the questionnaire (see Note 1) and a verifying survey among a third party (i.e., a partner).

There is also evidence from previous surveys that the extent to which underreporting occurs varies among the employed method of data collection. In this respect it is found that day-to-day reporting in a diary tends to yield more reliable answers about the extent of alcohol consumption than, for instance, self-reporting on a previous week, whereas underreporting tends to occur on a larger scale when it comes to questions referring to the frequency of drinking rather than with questions about the amount of consumed alcohol. While there is no similar research into the extent of underreporting with respect to drug use, the findings above do seem to be applicable for this kind of substance use as well.

In view of the observation that sensitive issues in general include a risk of underreporting, it is not unlikely that a high level of recognizability and a high status of the sample group will result in an increased risk as to that. In the present study which—unlike many other studies—was aimed at a well-

defined sample group of 150 persons with a certain prestige, it was considered of major importance to find ways of approach that would reduce the risk of receiving socially acceptable answers (see Note 2).

The approach selected for this survey was one in which the data, through strict anonymity, could not be traced to subgroups or individuals in parliament. With respect to the questionnaire, this entailed that all questions referring to background information (personal particulars, age, gender, marital status, cultural background) or political party membership of the members of parliament had to be left out. In addition, a freepost self-addressed envelope was included with the questionnaire to preclude any possibility of retracing the returned questionnaires through the postmark. As a result of this approach, findings emerging from the survey could not be distinguished into, for instance, age or gender, while previous surveys have shown these to be variables that are often closely associated to the nature and extent of the use of tobacco, alcohol, and drugs (e.g., Knibbe et al., 1985).

In addition to the occurrence of underreporting, the reliability and validity of findings emerging from surveys are affected by the percentage of respondents from the approached group participating in the survey, the so-called response percentage. When this response percentage turns out to be rather low, the acquired data cannot be considered to be representative for the whole group as such. In order to be able to generalize data, it is necessary to assume that the survey data of the nonresponse group would have been the same as those of the actual sample group, but there is no guarantee that this assumption is correct.

In the present study, attempts were made in various ways to minimize the nonresponse percentage. For instance, the chairman of the Dutch parliament was approached with a request to recommend the survey to the members of parliament (he indicated, however, he would not do so for any survey). In addition, all members of parliament received an accompanying letter in which the purpose of the study was described and in which both the respondent's anonimity and the importance of participating were emphasized. Two and 4 weeks after the first letter and questionnaire, two letters of reminder were send. As a result, 86 out of all 150 members of parliament returned a completed questionnaire (57%).

RESULTS

Substance Use and Participation in Games of Chance

The sample group used more legal substances such as coffee, tobacco, and alcohol proportionally than illegal substances. Over 90% of the respondents drink *coffee*; approximately 50% drink five or more cups of coffee a day.

Tobacco is used by 31% of the members of parliament; 40% of the respondents indicated they had smoked in the past but no longer did so. Thus, three out of 10 members of parliament had never smoked. Of those who do, 69% smoke cigarettes (18 members), 19% (five members) smoke cigars, and 12% (three members) smoke pipe tobacco. Eleven members (of all members of parliament, 13%) indicated they smoke over 20 cigarettes a day.

Of the respondents, 7% (six members) indicated they never drink *alcohol.* Two percent usually drink low alcoholic or nonalcoholic beer. A majority of 55% of all members of parliament usually drink wine ("wine, sherry, port, or vermouth"), 20% usually drink beer. Of all respondents (including teetotallers and those drinking low alcoholic or nonalcoholic beer), 7% indicated they have had six or more alcoholic beverages on average once a week or more in the last 6 months. One percent (one member) indicated drinking this amount every day. Of all "drinkers," approximately one-third have on average three alcoholic beverages or more on a single day (a day they drink) and 9% have on average four drinks or more. If the definition of Garretsen (1983) was applied, almost 10% of the members of parliament would fall into the category of "excessive" (7%) or "very excessive" (2%) drinkers (see Note 3).

Sleeping pills and tranquilizers had been used in the last 6 months by eight (9%) members of parliament. A quarter of this group had used these substances at least once a week.

None of the respondents reported to ever have used *illegal "hard drugs"* (heroin, cocaine, amphetamine, ecstasy, etc.). Over a quarter (27%) mentioned having used *hashish or marijuana* at one point or other. More than half of this group of 23 had done so less than five times in their whole life; 30% had done so between 5 to 25 times, and 17% (four members) had used marijuana more than 25 times. Only one representative reported to having used hashish or marijuana in the last year.

In relation to *games of chance* (lotteries, "scratch-off" lottery, casino, soccer pools, slot machine, etc.), 64% reported they had not participated in any game of chance during the last 6 months. Participating in bingo, playing the horses, soccer pools, and Golden Ten was hardly or not done at all. Six percent of all respondents had participated in a casino game in the last 6 months, all of them just once or twice. Another 6% had played on a slot machine, in most cases again just once or twice in the last 6 months. A slightly higher percentage (nine members, 11%) had bought "scratch-off" lottery tickets during this period. Two out of nine members had done so over 10 times. Of all games of chance, the lotteries (not including the "scratch-off" lottery) were the most popular among the representatives: 27% reported having participated in lotteries. The majority of the sample group had spent little money on games of chance; a mere 5% of the members of parliament (13% of the "players") in-

dicated having spent at least DFL. 100 (approximately US $60) in the last 6 months.

Knowledge of Substance Use

The questionnaire presented 12 statements, to each of which the respondents had to indicate whether it was true or false. Table 1 shows the percentages of answers given per statement. The percentages in boldface type represent the correct answers. The answers were scored while assuming that when respondents left an open answer, they were not able to answer the question correctly. The percentages at issue are shown in the third numerical column (see Table 1).

With respect to the questions of knowledge, it is noticeable that the statement referring to the interrelationship between body weight and susceptibility to drunkenness was answered incorrectly the most. The statement saying that the more someone weighs, the less he/she is susceptible to drunkenness, was

Table 1.

Answers to Questions of Knowledge (N = 86)[a]

	% True	% False	% Do not know
A (standard) glass of gin contains more alcohol than a (standard) glass of beer	38	**59**	2
The more someone weighs, the less susceptible he/she is to drunkenness	**28**	69	4
The blood alcohol level legally allowed for motorists is 0.08	20	**69**	12
A cup of coffee after drinking alcohol will sober you up	1	**97**	2
Riding a bicycle while intoxicated is not an offense	5	**93**	2
It takes the liver on average an hour and a half to absorb an alcoholic beverage	**67**	22	11
Alcohol has less effect on a full stomach	**73**	22	5
Hashish originates from the same plant as opium	7	**87**	6
Heroin is used only intravenously	17	**77**	6
A joint is a special kind of pipe filled with pure hashish	2	**90**	8
There are more heroin addicts than alcoholics in the Netherlands	1	**94**	5
You need increasingly more hashish to get the same effect	23	**66**	11

[a]The percentages in bold-face type represent the correct answers.

false (or "do not know") according to 73% of the representatives. The runner-up that was answered incorrectly the most was the statement referring to the amount of alcohol in a standard glass of gin and a standard glass of beer (40%).

Some four statements were answered correctly by at least 90% of the members of parliament (see Table 1). The statements on the "sobering-up" effect of a cup of coffee after having had alcohol and the number of heroin addicts compared to the number of alcoholics in the Netherlands presented the least problems: a mere 3 and 6%, respectively, of the respondents gave an incorrect answer.

Two of the respondents scored a maximum of 12 correct answers and about 40% answered 10 or 11 statements correctly. At least 50% of the members of parliament did well on seven, eight, or nine statements. Some 6% of the members of parliament revealed poor ready knowledge of substance use. They scored some five or less correct answers. Questions of knowledge in relation to drugs (even after adjustment in view of the difference in the number of questions) were in fact answered correctly more often than those concerning alcohol. Of the respondents, 45% gave a correct answer to all questions on drugs and 41% only had one wrong. The questions on alcohol produced percentages of 7 and 28%, respectively. In general, it can be concluded that the level of knowledge in relation to the questions at issue is high.

Opinion on Possible Policy Measures

The respondents were first presented with a number of statements on measures against smoking to each of which they had to indicate to what extent they agreed or disagreed. Roughly one in five members of parliament (19%) "agreed to a point" or "totally agreed" with the statement that the government should not interfere in the smoking habits of people. Thus, over 80% believed that government does have a role to play in this respect.

A large majority appeared to adhere measures to restrict smoking in public buildings. Almost three-quarters (74%) of the members of parliament totally agreed and 20% agreed to a point with the imposition of a smoking ban in public buildings. In addition, over 90% indicated they agreed "to a point" or "totally" with the statement that people who are still smoking in places where smoking is not allowed "should be dealt with."

In relation to some 12 possible alcohol, drugs, and gambling policy measures, it was subsequently sounded out whether the members of parliament did or did not agree with these. It is obvious that this sounding cannot be interpreted as voting; the answers of the respondents are spontaneous and the nec-

essary background information was not available at the time of answering. Table 2 presents the results of the sounding with respect to alcohol.

Almost all members of parliament indicated agreement with a reinforcement of the prevention policy on alcohol. About four-fifth (81%) favored a restriction of alcohol consumption in public places. All other measures mentioned were not endorsed unanimously. It is noticeable that about as many respondents agreed with as opposed a ban on advertising alcohol.

When it comes to the policies on drugs and games of chance, again a majority of the members of parliament participating in the survey appeared to be in favor of considering a number of changes in the current situation in the Netherlands (Table 3). For instance, 64% of the respondents indicated they favor legalization of marijuana. On the other hand, a (smaller) majority was in favor of reducing the number of coffee shops. A ban on advertising tobacco received more support than a ban on advertising alcohol (57 and 50% in favor, respectively).

As regards the policy on games of chance, it appeared that a large majority (76%) of the members of parliament favored a ban on slot machines in cafeterias; a majority (57%) also indicated opposition to a continuation of the recently introduced scratch-off lottery.

Association among Substance Use, Level of Knowledge, and Opinion on Policy

A subanalysis was performed to establish any differences in knowledge of alcohol, marijuana, and hard drugs that might occur between adherents and

Table 2.

Measures Regarding Alcohol (N = 86)

	% In favor	% Against
A ban on advertising alcohol	50	50
Increasing the price of a glass of "alcohol" by 50 cents	43	57
Restricting alcohol consumption in public places (schools, trains, swimming pools, etc.)	81	19
Raising the age limit under which alcohol cannot be bought	22	78
Reducing the number of bars	10	90
Reducing the number of shops selling alcohol	19	81
Reinforcing the prevention policy on alcohol	98	2

Table 3.

Measures Regarding Tobacco, Drugs, and Games of Chance (N = 86)

	% In favor	% Against
A ban on advertising tobacco	57	43
Legalization of marijuana	64	36
Reducing the number of coffee shops selling marijuana	57	43
Continuation of the scratch-off lottery	43	57
Banning slot machines in cafeterias	76	24

opponents of legalization of marijuana. The results show that the level of knowledge of the opponents was somewhat lower than that of the adherents: out of all 12 questions of knowledge, the opponents answered on average some eight questions correctly whereas almost 10 questions were answered correctly by the adherents. This difference was actually related to the lower level of knowledge of the opponents regarding questions of drugs.

It was also examined whether any differences occurred between adherents and opponents in relation to the question whether they had used marijuana themselves at one point or another. This analysis indicated that all members of parliament who themselves had used marijuana at one point or other favored legalization. As for those who never had used marijuana, it was found that half were in favor and half opposed.

A similar analysis was performed regarding the statement that the number of coffee shops selling marijuana should be reduced. Again the results show that the level of knowledge of the "conservative" group (those endorsing the statement at issue) was somewhat lower than that of those opposing this statement. Here, the differences in the level of knowledge between adherents and opponents were found to occur both with respect to questions on alcohol and questions on drugs. The analyses also indicated that especially the opponents of reducing the number of coffee shops had used marijuana themselves at one point or another: 44% of the opponents compared to 15% of the adherents. To conclude, it was found that the level of knowledge on drugs of those who had used marijuana at one point or another was somewhat higher than that of "non-users."

Comparison between Parliament and Population

In order to get some insight as to any differences between the representatives and the Dutch population in the nature and extent of alcohol use, drug

use, and gambling, the results of the survey were compared with those of a recent survey on the same issues among a sample group of over 3,500 inhabitants of Rotterdam from age 16 through age 69 (Bongers et al., 1994). As a matter of convenience, this sample group is referred to as "the population" in the following.

In addition to a comparison with the entire sample group, the results were compared to a selection of people of age 35 and up with a higher general secondary education ($N = 529$) in order to increase the comparability of the demographic background of both groups (parliament and population). This selected group from the sample group is referred to as the "comparison group" in the following.

Substance Use and Participation in Games of Chance

In relation to the use of *tobacco*, the percentages of present smokers among the parliament and among the population were comparable (in both cases approximately one-third). The percentage of former smokers among the representatives was, however, higher than that among the population (40% to over a quarter, respectively), and thus the percentage of people who had never smoked was lower in parliament (by at least one-third). In comparison with the group of the higher educated over-35s (the "comparison group"), these differences in smoking habits no longer occurred; the percentages of smokers, former smokers, and "never smokers" in the comparison group were nearly identical to those in parliament.

With respect to the kind of tobacco, the percentage of smokers of cigarettes among the representatives was lower than among the population (one-fifth and one-third, respectively), and the percentages of smokers of cigars and pipe tobacco were somewhat higher. As for smokers of cigarettes, it was found that the amount of cigarettes smoked was comparable in both groups: in both groups about half smoked on average 11 to 20 cigarettes a day, and about one-fifth smoked over 20 cigarettes a day.

In relation to the consumption of *alcohol*, the comparison indicated that in terms of percentage there were more drinkers among the members of parliament, and consequently less teetotallers, than among the population (93 and 82% drinkers, respectively). In relation to the comparison group, this difference was smaller (88% drinkers). It was also found that the preference for wine (or sherry, port, vermouth) was stronger among the members of parliament than among the population: at least half of the members of parliament indicated a preference for wine to other kinds of beverages, while this was the case for merely a quarter of the respondents from the population. Again these differences partly no longer occurred in the comparison with the higher educated over-35s (40% preference for wine). The proportion of "heavy drinkers" was, however, comparable in all three groups: both in parliament, the popu-

lation, and the comparison group about 4 to 6% had six or more alcoholic beverages at least three times a week, and about half the respondents indicated never to have done so in the last 6 months. The number of days in a month one drank alcohol was, however, significantly higher among the members of parliament than among the population: at least one-third and one-ninth, respectively, of the "drinkers" drank on average over 20 days a month. This difference did not occur in relation to the comparison group. The major part of the "drinking" parliamentarians actually had three or less drinks on a single day.

As regards the use of sleeping pills and tranquilizers, the members of parliament appeared to be a faithful representation of both the population and the comparison group. This was the case for the prevalence of use (in all three groups about one-tenth) as well as the frequency of use.

The Rotterdam questionnaire did not include any questions concerning *illegal hard drugs*, which left out any comparison of results.

It was noticed that in terms of percentage, the prevalence of "lifetime" use of marijuana among the representatives was higher than among the population (at least a quarter compared to slightly below one-fifth). This also held—albeit to a lesser extent—for the comparison between the parliament and the higher educated over-35s (slightly over one-fifth "lifetime" use of marijuana). On the other hand, the percentage of "recent" (last year) users of marijuana among the population was higher than that among the members of parliament, while the differences, if any, between the parliament and the comparison group were insignificant. In relation to the percentage of respondents having used marijuana at least 25 times, it was found that all three groups compared relatively similar.

In relation to the *games of chance*, it was found that in general the representatives were significantly less engaged in gambling than both the population and the comparison group. While almost two-thirds of the members of parliament indicated they had not gambled in the last 6 months, the corresponding percentage of the population and the comparison group was about 40%. With the exception of casino gambling, the percentage of respondents participating in any of the indicated games of chance was lowest among the members of parliament.

Opinion on Possible Policy Measures

In relation to the statement on measures against smoking, it was noticeable that all three groups held more or less similar views. The only statement that was found to pose more significant differences between the groups was the one stating that the government should not interfere in the smoking habits of people. The percentage of members of parliament favoring a government interference (disagreeing to a point or totally with the statement) was over 80%,

whereas the percentage favoring government interference among the population and the comparison group was a mere 50 to 60%.

On alcohol policy, it was noticeable that again most statements presented comparable percentages of adherents and opponents in all three groups. Only the statement on raising the age limit under which alcohol cannot be bought posed significant differences. While over three-quarters (78%) of the members of parliament opposed this, a majority of the population and the comparison group (58%) reported they favored it. Less significant differences emerged in relation to the statements on reducing the number of bars and reducing the number of shops selling alcohol. Again, these statements presented more opponents among the parliamentarians (80 to 90% against) compared to the population or the comparison group (both 60 to 70% against).

The questionnaire of the Rotterdam survey did not include any questions referring to an opinion on policy measures in relation to drugs: therefore, results emerging from the relevant questions in the survey at issue could not be compared to the Rotterdam survey.

DISCUSSION

As has been indicated in the Method section, any interpretation of data should consider the potential influence of confounding factors. Given the risk of underreporting and the possibility of selective (non)response, any interpretation of the data in this survey should therefore be dealt with carefully and with the necessary reservations. This also holds for the comparison with the data from the Rotterdam survey, in which the background characteristics of the comparison group of higher educated over-35s may still differ substantially from those among the members of parliament.

In relation to the consumption of alcohol among the members of parliament (sampled), it is noticeable on the one hand that the majority of the members of parliament can be considered to be "moderate drinkers," and on the other that a rather considerable number drinks quite substantially. If the definition of Garretsen (1983) was applied, almost 10% of the members of parliament would fall into the categories of "excessive" (7%) to "very excessive" (2%) drinkers, which actually does not differ substantially from the corresponding percentages of the population (5 and 3%, respectively).

As for the other psychoactive substances it is noticeable that at least a quarter of the members of parliament have used marijuana. It should further be observed that this has been over a year ago for almost all concerned, which (therefore) could also relate to the use of marijuana during adolescence.

The level of knowledge in relation to alcohol and drugs among the members of parliament sampled is found to be high in general. In this respect it is

noticed that questions of knowledge concerning drugs were answered correctly more often than questions concerning alcohol.

In reference to the questions of opinion concerning certain policy measures on tobacco, alcohol, drugs, and gambling, it is particularly noticeable that some two-thirds of the members of parliament indicated favoring the legalization of marijuana. Even in the most conservative scenario—assuming that all members of parliament who did not complete the questionnaire would oppose legalization—the adherents of legalization would still be at least one-third of the members of parliament (35%).

Finally, a majority of the members of parliament sampled oppose a continuation of the scratch-off lottery. This is particularly noticeable given the recent (1993) parliamentary endorsement of the introduction of an instant lottery in the Netherlands (Ministry of Health, Welfare, and Sports, 1993) and its subsequent actual introduction in 1994.

To conclude, the results from this study provide a different view on the persons involved with alcohol- and drug-use(r) intervention policy-making in a country. Instead of official political party programs, this study focused on the personal experiences, attitudes, and knowledge of politicians with regard to alcohol and drugs. Whereas the Dutch parliament as a whole—as indicated in the political parties' programs—seems to oppose the legalization of marijuana, this study suggests that parliamentarians respond differently when asked for their personal opinion. Apparently, given that all parliamentarians who had used marijuana themselves were in favor of legalization, personal experience with a psychoactive substance may play an important role in the parliamentarians's personal (political) opinion, but this does not necessarily reflect his political standpoint.

With respect to the level of alcohol use reported by some parliamentarians—though comparable to that in the general population—it should be noted that the continuation of substantial drinking, may have adverse consequences in various areas of daily functioning.

APPENDIX: QUESTIONNAIRE

General properties:	
Type of questionnaire	Self-report, closed items
Number of items	18
Duration of assessment	Approximately 10 minutes
Pretest	Pretested and applied in earlier epidemiological studies in the general population of Rotterdam

(*continued*)

APPENDIX. *Continued*

Areas/items covered:
- Coffee (1 item):
  - Current average amount of coffee consumption
- Tobacco (2 items):
  - Lifetime and current tobacco smoking
  - Current average amount of tobacco smoking
- Alcohol (4 items):
  - Types of alcoholic beverages recently drunk (beer, wine, liquor, etc.)
  - Frequency of having drunk six or more glasses of alcohol on one day (previous 6 months)
  - Number of days of alcohol use (previous month)
  - Number of glasses of alcohol on an average drinking day
- Marijuana (3 items):
  - Lifetime use of marijuana
  - Number of times marijuana used (lifetime)
  - Recency of last marijuana use
- Psychoactive medicine (2 items):
  - Recent use of benzodiazepines (previous 6 months)
  - Average frequency of benzodiazepine use (previous 6 months)
- Illegal psychoactive substances (1 item):
  - Lifetime use of illegal psychoactive substances (heroin, cocaine, amphetamines, etc.)
- Gambling (2 items):
  - Frequency of various forms of gambling (previous 6 months: lotteries, "scratch-off" lottery, horse-betting, slot machines, bingo, casino games, soccer pools)
  - Average amount of money spent on gambling (previous 6 months)
- Knowledge about alcohol and drugs (1 item):
  - Twelve statements ("true/false") about alcohol and drugs
- Attitude toward policy measures (2 items):
  - Attitude toward tobacco policy measures (4 statements)
  - Attitude toward alcohol, drugs, and gambling policy measures (12 statements)

NOTES

1. The questionnaire used in this survey offered (limited) possibilities of identifying inconsistent answers. If any inconsistencies did occur, the answer that represented the higher consumption level—in view of an anticipated tendency of underreporting—was considered to be the most reliable.

2. For instance, it was at first considered to employ a method in which the individual respondent was given the opportunity to answer in such a manner so as to rule out any possibility for the researcher to interpret the answer at an individual level, the so-called "randomized response" technique. This technique does, however, allow for interpretation of the answers at a group level after certain adjustments. It was later decided not to employ this method because the expected yield in terms of socially less acceptable answers and a possible higher response percentage did not countervail against the contingency margin this method entails.
3. In his study Garretsen defines the group of "very excessive drinkers" as those who have at least five times a week, or at least 21 days a month, six or more alcoholic beverages. The group of "excessive drinkers" in his study is defined as those who (a) have three to four times a week, or nine to 20 days a month, at least six alcoholic beverages or (b) at least 21 days a month four or five alcoholic beverages.

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Reducing Parental Risk Factors for Children's Substance Misuse: Preliminary Outcomes with Opiate-Addicted Parents

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ABSTRACT

Parents in methadone treatment were offered an experimental intervention, Focus on Families, designed to reduce their risk of relapse and their children's risk of substance use. Experimentally assigned volunteers participated in systematic group training in relapse prevention and parenting skills, and received home-based case management services. Immediate posttreatment outcome results reported here include analyses of covariance controlling for baseline measures. Analyses show experimental parents held more family meetings to discuss family fun, displayed stronger refusal/relapse coping skills, demonstrated stronger sense of self-efficacy in role-play situations, and had lower levels of opiate use than control subjects. No significant differences in family

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bonding, family conflict, or other measures of drug use were found. The utility of intervening with drug-addicted parents in methadone treatment is discussed in light of these findings.

Key words. Methadone; Treatment; Relapse; Prevention

INTRODUCTION

This article describes immediate posttest outcomes from an experimental test of a program providing opiate-addicted parents in methadone treatment with parent training and relapse prevention skills, supported by home-based case management. This program was developed and tested because parent and family factors play an important role in increasing or decreasing children's risk of adolescent substance use (Hawkins et al., 1992; Simcha-Fagan et al., 1986).

Precursors of adolescent substance use have been identified in longitudinal studies (see Hawkins et al., 1995; Kandel et al., 1986; Newcomb et al., 1986). These precursors are often called risk and protective factors. Risk factors predict the likelihood of increased drug use, and protective factors predict the decreased likelihood of drug use. Both risk and protective factors for adolescent substance use are found in families. The causal pathways linking risk and protective factors to later substance use and the dynamic interactions among these factors at different developmental stages are not well understood (Clayton, 1993). They do, however, provide a research-based framework to organize interventions.

Family or parental risk factors for children's substance use include poor family management practices (Kandel and Andrews, 1987), family conflict (Baumrind, 1983; Penning and Barnes, 1982), favorable parental attitudes toward drug use, and parents' involving their children in their drug use (Ahmed et al., 1984). Family characteristics that protect or buffer children from risk include parent–child attachment and warmth (Brook et al., 1990; Kandel et al., 1978), parent support of child competencies (Coie et al., 1993), and positive parent–child interaction and communications (Hundleby and Mercer, 1987; Shedler and Block, 1990).

Children of substance-misusing parents are frequently exposed to many of these risk factors. The evidence suggests that an increase in number of risk factors increases risk (Bry et al., 1982; Newcomb et al., 1986). Although opiate-addicted parents are not a homogeneous population, research shows families headed by opiate addicts are often characterized by poor family management practices, high family conflict, low family cohesion, and high stress (Kumpfer, 1987; Kumpfer and DeMarsh, 1986). Children of opiate addicts are likely to share with their parents extreme poverty and poor, unstable living

conditions, which often result from parents' low-status occupations and employment problems (Kumpfer, 1987; Robins, 1980). These families are also likely to face other difficult life circumstances including physical and mental illness, trouble with the law, and low educational attainment (Kolar et al., 1994; Suffet et al., 1981). Parental modeling also plays a significant theoretical (Bandura, 1977; Akers et al., 1979) and empirically substantiated role in contributing to children's drug use (Kandel et al., 1978; Peterson et al., 1994). Though not all persons exposed to these risk factors will become addicts themselves, this multiple exposure places children of opiate addicts at greater likelihood of developing later problem behavior, including substance misuse. Despite these increased risks for children living with drug misusers, there is a paucity of rigorous research studies on parenting problems for addicted parents.

Research suggests parent training programs can reduce family-related risk factors, enhance family-related protective factors, and decrease children's antisocial behavior (Dumas, 1989). Three major challenges have been noted in tests of parent training interventions. First, parent training programmers have experienced difficulty in recruiting high-risk parents (Grady et al., Hawkins et al., 1987). Second, studies of high-risk families have made it clear that short-term programs (8–10 sessions) are unlikely to succeed because of the multiplicity of these families' problems (Patterson and Reid, 1973; Wahler, 1980). Clinical reports suggest that high-risk parents may require twice as many hours of training (Patterson, 1974; Patterson and Fleishman, 1979). Third, parent training alone may not be potent enough to produce substantial, lasting changes in parents' and children's behaviors, especially among high-risk families (Reid, 1993; Tremblay et al., 1992). Perhaps because of these challenges there is little rigorous evidence on the effectiveness of parent training interventions with substance-misusing parents, and there have been no randomized experimental evaluations of parent training interventions with this population. (See Table 1 for an overview of results of published programs.)

This research suggests that parent training interventions with substance-misusing parents should be of long duration, pay particular attention to recruitment and retention mechanisms, and offer other supportive services. Parents who are in treatment for substance use are good candidates for such interventions because they have already made a commitment to examine their drug use and have begun to work on making changes in their lives. They are more likely to be available for parent training recruitment efforts, and interventions can be of sufficient duration if the parent training is integrated into the treatment program. Services like home-based management and training in relapse prevention skills can complement parent training, adding intensity and helping to keep addicted parents in treatment.

Table 1.

Select Interventions for Reducing Risk of Substance Use among Children of Substance Users

Author, date	Target population	Goals	Techniques	Staff	Sites	Criteria for success/failure
Gross and McCaul, 1992	Children of substance users (COSAs)	Provide social support and enhance drug resistance skills to reduce the risk of drug use	13-weekly 1-hour sessions emphasizing social support and teaching life and drug-resistance skills	Counselors with masters degree	Baltimore: various locations, e.g., schools, community centers	Comparison with high-risk youth with nonsubstance-using parents at posttest and 1-year follow-up. Measures: Depression, self-esteem, drug use, and behavioral problems
Haskett et al., 1992	Cocaine using mothers and their children	Reduce risk of child abuse and drug relapses	Relapse prevention training, case management services with in-home follow-up, group and individual counseling, independent-living skills group, parenting classes, education and training, community involvement	Multidisciplinary team: Medical, mental health, and social service professionals	Hospital based and funded by Florida's Department of Social Services	Ongoing process: Currently they are considering: Long-term follow-up of abuse, cost effectiveness of each component, and client satisfaction. No comparison group
Kumpfer and DeMarsh 1986; DeMarsh and Kumpfer, 1986	Heroin, narcotic, and polydrug-using parents and their children	Decrease negative factors associated with child drug use (e.g., parent drug use, family conflict) and increase protective factors associated with abstinence (e.g., parenting skills, positive parent child interaction)	14-session structured curriculum focused on parent training, child support, and family life skills	Not reported	Salt Lake City County	Pre–post comparison of parent reports of having problems with children, tests of parenting knowledge, and reports of child well-being and problem behaviors. Comparison group results not presented

Russell and Free, 1991	Infants, toddlers, and families of persons who used substances during pregnancy	Increase families ability to provide healthy environment, encourage parent to seek drug treatment, teach families about addiction, and disseminate knowledge to others	Case management and a family program with 10 4-hour weekly sessions (e.g., preventive health care for children, child development, nutrition and feeding, self-care skills, behavior management)	Trained team of professionals from medical, mental health, and other social service backgrounds	Not reported	Annual monitoring of family including physical exams and developmental assessments. No comparison group
Springer et al., 1992	Children (age 4–11) of drug users and alcoholics and their families	Prevent drug initiation among children and help drug-addicted parents to quit	12-week curriculum with both peer and family interaction groups. Utilizing art, play, drama, and communication activities	Initially a family/child counselor and experienced art therapist, Later added art therapists with masters degrees	Southwest Council on Alcohol and Drug and Problems, Downey, CA	Ability to recruit and retain children and parents, pre–post comparison of Child Behavior Checklist (Achenbach) ratings. No comparison group
Suffet et al., 1981	Pregnant addicts (presumably heroin)	Promote positive change in drug use, health, and family relationships	Medical care, counseling to decrease drug use, maintain proper nutrition, and medical attention	Medical unit and counseling staff	Pregnant Addicts and Addicted Mothers Program, New York City	Judgments of programs helpfulness in several areas (drug use, health, family, friends/leisure, housing, legal, education, and income). No comparison group

This article reports on the immediate impact of an intensive experimental parent training program for parents in methadone treatment on parent-related risk and protective factors. Both adolescent development and adult recovery from addiction are long-term processes. Helping families to change these risk and protective factors is intended to reduce predictors of substance use and encourage healthy lifestyles and stronger relationships. While it is important to demonstrate whether programs can produce these changes, whether these immediate changes will produce long-term reductions in substance use among children remains open to investigation.

METHODS

Intervention

Focus on Families is a program that combines parent skills training and home-based case management services to reduce parent's risk for relapse and children's risk for substance use while enhancing protection. The intervention aimed to improve opiate-addicted parenting and relapse skills through systematic group training. Training sessions followed a structured curriculum format. (Table 2 provides an overview of skills taught during each session.)

Sessions were conducted by a team that included one male and one female who were mature, Euro-American parents with master's degrees in social work and extensive backgrounds in parenting, addictions, and mental health issues. Parents practiced skills during the sessions and were provided with home practice activities. They were taught how to conduct family meetings as a vehicle for transferring the techniques learned in the parent sessions into the home. Children attended 12 of the sessions to provide families the opportunity to practice new skills together in a controlled environment.

In addition to the parenting curriculum, the program included home-based case management to help parents and children generalize and maintain the skills learned in the group sessions and assess clients' appropriate use of the skills. Two master's level home-based service providers, one male and one female, worked individually with families for about 9 months, beginning 1 month prior to the parent training sessions and continuing for 4 months after the parent training. Case managers first helped families identify goals and then monitored work toward them, reinforcing in the home the skills parents learned in class. They assisted families to hold family meetings, increase each member's opportunities for family involvement, and promote children's opportunities for involvement in positive activities outside of the family. Case managers worked with parents to secure community services for families as needed. Case managers attempted to have one home visit (about 90 minutes' duration) and two phone calls per week. Thus, during the parent training phase, each family

Table 2.

Focus on Families Parent Training Curriculum

Topic area/ session number	Skills taught	Session activity[a]
Family retreat:		
	Introductions/ trust building	Overview with children and parents; family goal setting, setting group expectations
Relapse skills:		
1	Relapse prevention	Parents define relapse situations/self talk
2	Relapse prevention	Parents learn and practice urge surfing and distractions
3	Anger/stress management	Parents practice skills with video
4	Relapse coping skills	Parents learn skills to cope with relapse and practice with video
Communication skills:		
5	Child development	Parents learn about realistic expectations
6	Open questions/paraphrasing	Parents practice building rapport
7	Play and talk	Practice with children
8	Expressing feelings	Parents practice "I messages"
9	Family meetings	Practice communication skills with children
Family management skills:		
10	Setting expectations	Identification of specific expectations
11	Monitoring	Parents develop monitoring charts
12	Positive consequences	Parents learn law of least intervention
13	Charts and rewards	Parents share expectations and chart with children
14	"First–then" and time out	Parents practice setting limits and using consequences
15	"First–then" and time out	Parents and children discuss family roles and practice consequences
16	Privilege restriction and contracting	Parents practice privilege restriction and contracting for behaviors
17	Choosing the best skill	Families practice skills learned in previous sessions
18	Position on drugs	Parents explore own attitudes/views
19	Position on drugs	Parents develop family position
20	Position on drugs	Parents share position with children
Teaching your children skills:		
21	Refusal skills	Parents learn refusal skills

(*continued*)

Table 2. *Continued*

Topic area/ session number	Skills taught	Session activity[a]
22	Refusal skills	Parents teach children refusal skills
23	Refusal skills under pressure	Parents and children practice pressure
24	Problem solving	Parents learn problem-solving skill
25	Problem solving	Parents practice problem solving
26	Problem solving	Parents practice with children
27	Problem solving	Parents practice with children
28	Home-learning routines	Parents establish a home-learning routine
29	Monitoring skills	Parents practice home/school communication skills
30	Family strengths	Parents and children identify family strengths
31	Communication skills	Parents practice with school staff
Termination:		
32	Termination potluck	

[a]All sessions are 90 minutes and conducted twice weekly with the exception of the 5-hour family retreat.

received up to 5 hours of direct service per week, including 3 hours of group sessions and 2 hours of case management (Catalano et al., in press).

The Focus on Families intervention used several incentives to address the anticipated problems with recruitment and retention. Families attending the retreated received $30. Parents received $3 for each session attended and $2 for homework completion. Transportation and child care were provided as needed. Children received small toys for their participation, and a variety of other family incentives were offered (e.g., tickets to the zoo, aquarium, or baseball games). Fifty-one percent of those assigned to the experimental treatment condition completed at least half (16) of the sessions. This compares favorably with other parenting programs, including those for the general population. This is especially notable given the intensity of the training program and the high-risk nature of this population (DeMarsh and Kumpfer, 1986; Spoth and Redmond, 1994).

Sample

One hundred and forty-four parents were recruited from two methadone clinics in cohorts of approximately 20 individuals between 1990 and 1992. The following three eligibility criteria were used: (a) methadone treatment at one

of the two participating clinics for a minimum of 90 days before participating in the study, (b) having children between the ages of 3 and 14 years living with the participant at least 50% of the time, and (c) residence not more than 25 miles from the participating methadone clinic. Eligible individuals who responded to recruitment were asked to participate voluntarily in the study and to agree to random assignment into either standard methadone treatment plus the supplemental parenting program or to standard methadone treatment alone, which served as the control group. Approximately 78% (n = 144) of those screened eligible completed baseline interviews. At the time of baseline, eight parents were no longer eligible. (Table 3 provides reasons for refusal provided by 26 parents who did not complete interviews.)

Subjects were randomly assigned to the experimental or to the control condition after blocking. Blocking criteria were race, age at first drug use, whether subjects lived with a spouse or partner, and ages of the subjects' children. A higher proportion of eligible subjects were assigned to the experimental (n = 82) than to the control (n = 62) condition. Of these subjects (N = 144), 94% (N = 135; 77 experimental and 58 control) were available for interviews at posttest. [These 135 parents and 101 children (age 9–14) are provided in Table 4.] Parents not interviewed at follow-up do not differ statistically from the original sample on any of these characteristics.

Assessment Procedures

Interviews were conducted with parents by interviewers who had either extensive interviewing backgrounds or experience working with problem populations. During the baseline interview, parents provided historical and current data on a number of topics including demographics, drug use and drug use history, and family and social relationships. An audiotaped role-play test was administered to measure problem solving, refusal, and relapse coping skills (Hawkins et al., 1986, 1989). Parents were interviewed again 5 to 7 months

Table 3.

Reasons for Refusal to Participate

Too busy	12
Passive refusals—e.g., "come back later"	4
Concern about confidentiality	4
No reason given	3
Health problems/hospitalized at time of baseline	2
Family unwilling to participate	2
Transfer to inpatient treatment	1
"Live too far away"	1

Table 4.

Demographic and Drug Use History of the Focus on Families Subjects (N = 135)

Demographics:	
Average age	35.4 years
Female	73.3%
Black	17.8%
White	77.0%
Married	20.7%
Divorced/separated	34.8%
Never married	40.0%
Living with spouse/partner	62.7%
History of legal problems	88.5%
High school/GED+	59.3%
Somewhat or very religious	71.1%
Finances and work:	
Worked for pay in 3 months prior to methadone treatment	66.7%
Received AFDC in 6 months prior to methadone treatment	58.5%
Illegal income in household 6 months prior to methadone treatment	74.1%
History of narcotic use:	
Age of first narcotic use	19.1 years
Monthly opiate use before treatment	64.5 times
Money spent per month on narcotics before treatment	$704.10
History of legal problems:	
Experienced trouble with the law	88.9%
Convicted of a crime	77.7%
Spent time in jail or prison	69.2%
Percent using drugs in month prior to baseline:	
Marijuana	21.4%
Opiates	37.0%
Cocaine	21.5%
Other illegal drugs	14.1%
Child characteristics of 9–14 year olds (N = 101):	
Gender:	
Male	54%
Female	46%
Ethnicity:	
African-American	25%
European-American	62%
Mixed race and other	13%
Free/reduced lunch	77%
Mean age	11.42 years

later, immediately after the end of the parent training component. The following intervention-related variables examined in the analyses are reported here. (Information on sections and length of surveys is reported in Appendix A.)

Family Meetings

Four single-item questions were asked about the frequency of family meetings to plan family fun, talk about family problems, talk about family position on drug use, and to find ways in which children can take on more responsibility. At posttest the wording was changed to indicate frequency of meetings since the baseline survey.

Skills

An audiotaped role-play test, with established reliability and validity (Hawkins et al., 1989), the Problem Situation Inventory (PSI) was used. It measures general problem solving skills and drug refusal/relapse coping skills.

Self-efficacy

After listening to each problem situation in the PSI, subjects were asked to indicate the likelihood that they would use drugs in this type of situation. Three scales were created from these data: one to indicate sense of self-efficacy across all items, one to indicate self-efficacy not to use drugs in drug refusal/relapse coping, and one to indicate self-efficacy in general social problem situations.

Use of Other Treatment and Services

A five-item index measured the number of services each respondent utilized. The index included self-help groups (e.g., Alcoholics Anonymous or Narcotics Anonymous), outpatient counseling (e.g., mental health center or family services bureau), private counseling (e.g., psychologist or social worker), inpatient treatment, or other services related to drug use.

Family Bonding and Conflict

A nine-item subscale of the Moos Family Cohesion Scale was used to measure family bonding (Moos, 1974).

To measure family conflict, a three-item scale was created covering the frequency of family arguments, family criticism, and family members getting

upset with one another. Domestic conflict was assessed with a six-item index covering how often the respondent yelled; threatened to hit or throw something; slapped, hit, or shoved the spouse or partner; and how often the respondent had been the recipient of these behaviors from the spouse or partner. Subjects not living with a spouse or partner at either baseline or posttest were excluded from analyses that examined this variable.

Substance Use

At baseline self-reports were collected on respondents' frequency of marijuana, cocaine, opiate, and other drug use in the previous month. At posttest these items were restated to measure the number of times the respondent had used these substances since the last interview. In addition, 25% of the subjects randomly selected at posttest provided a urine specimen to corroborate self-reports. The urine verification found few false negatives across substances (2–9% depending on the substance) and no statistical differences in false negatives across the experimental and control groups.

ANALYSIS

Multivariate analysis of variance techniques were used to assess the random assignment of subjects to the experimental and control conditions. No significant differences between groups were found in the baseline measures reported above. We used similar techniques to assess baseline differences between the samples at the two methadone clinics. No significant differences were found in the outcome variables measured at baseline. However, there were differences in demographic composition. One clinic was racially more homogeneous (there were no eligible African-American subjects at that clinic), and more of the eligible subjects at that location were married.

Analysis of covariance techniques were used to assess experimental and control group differences at posttest, controlling for baseline measures. Logistic regressions were run for dichotomous-dependent variables. In addition, because the project was conducted at two locations and there were demographic differences by location, we also examined the direct impact of the experimental setting on the outcome measures as well as its interaction with the experimental effect. For all but one analysis, neither the experimental setting nor the interaction of setting and treatment was significant.

Not all subjects in the experimental condition were fully exposed to the parent training and case management program. Of those initially assigned, 11 (13%) never attended a single parent training session, although 42 (51%) attended at least 50% (16) of the sessions. The comparisons made here include

all subjects in the initial random assignment and thus are a conservative test of the intervention effects. Presentation in this form is important for both methodological and policy considerations. Methodologically, this is the appropriate comparison, since including only those who follow through with program will likely bias the analyses in favor of the experimental condition (Cook and Poole, 1982; Mark, 1983). For policy decisions about whether or not to institutionalize the program, it is important to recognize that the degree of compliance and dropout will affect the overall program effectiveness with a clinic population.

RESULTS

Table 5 shows the posttest means adjusted for baseline levels and the standard deviations for the outcome variables. The first set of variables shows that three critical implementation checks were significant. At posttest, parents in the experimental group were holding more family meetings than were controls. They were holding significantly more family meetings to discuss family fun, and number of meetings held to discuss ways in which the children could take on more responsibility showed a trend level difference ($p < .10$). Although experimental families were having family discussions on drug issues or family problems slightly more frequently than control families, these variables were not significantly different between the groups.

Overall, experimental subjects displayed significantly higher skill levels in role-play situations. The results indicate this difference is primarily due to increased drug refusal/relapse coping skills. General problem-solving skills show a only a trend level difference ($p < .10$). Experimental subjects were significantly more confident of their ability to resist drugs in these role-play situations. However, experimental subjects at posttest were no more likely to believe they would remain heroin-free than were controls. No differences were found between the experimental and control groups in use of services outside of the participating methadone clinics. These results suggest differences observed between experimental and control groups result from the supplemental Focus on Families intervention and not from differences in services provided by other treatment providers.

There were no differences between the experimental and control groups in family bonding, family conflict, and domestic conflict. The baseline covariates were highly significant, indicating stability among these domains. There were no differences in the prevalence of marijuana, cocaine, opiates, or other substances used during time since the experimental and control subjects' baseline interview. The frequency of alcohol, marijuana, cocaine, and other drug use was not significantly different between the experimental and control groups.

Table 5.

Analysis of Covariance Comparing Outcome Measures of the FOF Experimental and Control Groups at Posttest, Controlling for Baseline Measures

Variables	Control group		Experimental group		
	Adjusted mean	SD	Adjusted mean	SD	N^a
Family meetings frequency:					
Family fun	1.44	(1.20)	1.93*	(1.56)	134
Discuss drug use	1.63	(1.41)	1.88	(1.48)	134
Discuss problems	1.64	(1.33)	1.99	(1.61)	134
Discuss responsibility	1.52	(1.28)	1.94$^+$	(1.56)	134
PSI skill levels:					
Total	3.94	(1.23)	4.46*	(1.47)	126
Refusal/relapse coping	3.77	(1.85)	4.49*	(1.94)	125
General problem solving	4.06	(1.07)	4.45$^+$	(1.32)	127
Self-efficacy:					
Total	3.16	(0.59)	3.45*	(0.90)	
Drug refusal/relapse coping:	2.94	(0.75)	3.29*	(1.07)	135
General problem solving	3.37	(0.59)	3.61*	(0.83)	135
Stay off heroin	3.59	(0.65)	3.51	(0.78)	133
Other treatment services	1.12	(1.21)	1.25	(1.18)	135
Family factors:					
Bonding	7.30	(2.00)	7.21	(2.19)	135
Conflict	2.98	(0.86)	2.95	(0.90)	135
Domestic conflict	2.00	(0.70)	2.04	(0.75)	78
Drug use since baseline (prevalence):					
Marijuana	29.8		22.1		135
Cocaine	31.6		35.1		135
Opiates	56.1		61.0		135
Other	29.8		20.8		135
Frequency:					
Marijuana	9.69	(58.34)	13.82	(40.88)	135
Cocaine	7.37	(28.58)	8.92	(23.87)	135
Opiates	54.30	(136.43)	20.06*	(34.46)	135
Other	2.49	(8.67)	4.17	(17.38)	135

[a]*N*'s vary slightly from analysis to analysis due to missing data or absence of a spouse/partner.
$^+p < .10$.
$^*p < .05$.

However, there were differences in the frequency of opiate use during this time period. This effect, however, varied by treatment location. Analyses indicated a direct effect of experimental condition ($F = 10.52$, p .001), experimental setting ($F = 10.56$, $p = .001$), and an interaction between the two ($F = 9.49$;

$p = .003$). An analysis of the interaction indicated that the experimental subjects used opiates less frequently than controls at both clinics, but controls at one of the clinics used them much more frequently than controls at the other clinic.

DISCUSSION

Immediate posttreatment effects of Focus on Families on parent-related risk factors for children's substance misuse were examined here. The experimental test of the intervention investigated the impact of the program on family involvement and communication, parent–child bonding, family conflict, parents' skills and self-efficacy to avoid or cope positively with high-risk relapse situations, and parents' use of drugs.

Reported behavior differences among parents in the experimental condition at the completion of the 16-week training program encourage guarded optimism for the potential of the Focus on Families intervention to reduce parent-related risk factors and enhance protective factors for children of parents in methadone treatment. Parents in the experimental condition reported holding more family meetings across a variety of topics. The higher frequency of family meetings to discuss family leisure-time activities suggests that the intervention is producing increased positive involvement and communication among parents and children. Experimental parents reported trend level differences of more meetings to expand children's roles appropriately in the family and thus increase their involvement. Family meetings were an explicit part of the intervention. Parents were taught and practiced appropriate ways to conduct meetings in group sessions and were assisted by case managers to carry them out in the home. It is thus probable that there are qualitative as well as quantitative differences in the implementation of family meetings between experimental and control subjects.

The intervention is associated with differences favoring the experimental group at posttest in relapse and problem-solving skill levels as well as in parents' sense of self-efficacy to use these skills. Although this did not translate into a higher belief that they would remain free of heroin, experimental parents showed a significantly lower frequency of current opiate use. There were no significant group differences in the prevalence or frequency of other drug use.

In the authors' view, this lower frequency of use of the primary drug of choice is an important finding. Although abstinence from drug use is often a stated goal of substance user treatment programs, relapse is a common experience (Surgeon General, 1988). From our perspective, both abstinence and harm reduction models should be incorporated in interventions. Focus on Families training in drug refusal and relapse coping was designed to enable subjects

to use nested hierarchical messages incorporating both abstinence and harm reduction. The primary abstinence message is "Refuse drug offers and remain abstinent." The secondary harm reduction message is "If you use, it is possible to stop your use before it leads to harm from a full-blown relapse" (Marlatt and Gordon, 1985). Because people are more likely to support that which they create, case managers work with parents to identify individual, meaningful, and attainable goals. It was hypothesized that teaching parents to use these two messages would lead to less frequent drug use and more abstinence. At immediate posttest the harm reduction goal of less frequent heroin use was achieved.

These findings suggest that intensive family interventions with parents in methadone treatment can reduce their children's exposure to critical parent-related risk factors. However, the reader should note that this preliminary report did not examine children's behaviors. Most important of the changes is the change in parent-related risk factors of parental drug use and the protective factor of family involvement through meetings. The Focus on Families program was associated with a reduction in frequency of opiate use among the parents. Reduction in parents' use of opiates is probably critical to making any changes in other spheres in their lives.

If the reduction in drug use and improvements in parent–child involvement/interaction and parents' skills and self-efficacy continue over time, then changes in other important family risk and protective factors may result, including increased family bonding and reduced family conflict. The Focus on Families program continued to intervene with families after posttest, with 4 months of in-home case management services. These services were expected to assist families in maintaining the positive changes they made in the intervening variables of involvement, interaction, skills, and reduced parent drug use. Program effects will be examined again at 12-month follow-up to see if these differences were maintained and to investigate whether differences in family conflict and bonding were produced.

These significant differences were produced under very conservative test conditions. All subjects with baseline and posttest data assigned to experimental and control conditions were included in the comparison, including experimental subjects who received little or no program exposure. The findings suggest the promise of intervening with parents in methadone and other drug treatment settings, demonstrating that such interventions can be implemented and can reduce risk factor exposure. An advantage of working with methadone patients is that they have higher attendance and lower dropout rates than those in other treatment settings (Bale et al., 1980; Simpson et al., 1979), and are more likely to be able to stay with the long, intensive treatment.

Two caveats about these results must be mentioned. The results were produced at posttest and show only the immediate effects after a 4-month inter-

vention. These effects are noteworthy because it is important to demonstrate intervention implementation and immediate risk reduction, particularly when working with populations who have multiple problems. Few studies have reported a reduction in opiate use associated with an outpatient family intervention even immediately posttreatment (Stanton, 1979; Szapocznik et al., 1988). When these immediate effects are demonstrated, the long-term efficacy of the intervention is more likely. However, despite the possibility of increases in intervention effects over time (Botvin and Eng, 1982; Flay et al., 1985), most studies demonstrate a decline in effects (Hawkins et al., 1989; Schinke and Gilchrist, 1984). Thus, extended follow-up results are also important in evaluating the overall efficacy of the intervention.

A second caveat is that this report has examined only parent differences because follow-up child assessment was not completed at immediate posttest. The effectiveness of the intervention must finally be judged by the children's perceptions and behavior as well the as parents'. Nevertheless, it is theoretically important to examine changes in parents' behaviors and attitudes immediately after the intervention to determine whether or not changes in parent-related risk factors are possible.

Finally, while this study and other studies report on immediate changes in parental risk and protective factors at the molar level, future studies are warranted to examine the molecular process of family change that produces such findings.

APPENDIX: FOCUS ON FAMILIES INSTRUMENTS

	Number of items	Average minutes to complete
Parent interviews:		
Baseline interview	125	60
History, demographics, family risk and protective factors, motivation, and cost/benefit information:		
Rating of child behavior 3–4 years	30	8
Rating of child behavior 5–14 years	46	12
Problem Solving Inventory (audio-role play test)	12	25
Average total baseline		105
Child baseline interviews:		
6–8 years	47	18

(*continued*)

APPENDIX. *Continued*

	Number of items	Average minutes to complete
9–10 years	72	27
11–14 years	103	43
Posttest:		
Family risk and protective factors and drug use	70	60
Problem Solving Inventory (audio-role play test)	12	25
Random urine verification		10

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Rohypnol Misuse in the United States

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ABSTRACT

Rohypnol, a potent sedative-hypnotic drug prescribed extensively throughout the world, is illicit in the United States. Recently, this drug has gained popularity among United States youths as a cheap means of intoxication and subsequently has become the focus of numerous criminal investigations. College men are alleged to slip Rohypnol tablets into unsuspecting women's drinks and then sexually abuse their sedated victims. Although law enforcement agencies and drug policy groups consider Rohypnol to be an "imminent problem," little is actually known about patterns of misuse. Presented here is a brief overview of Rohypnol's contemporary appearance in the United States.

Key words. Rohypnol misuse; Flunitrazepam; Youth drug use; Drug policy

INTRODUCTION

The Office of National Drug Control Policy (ONDCP) lists Rohypnol as an "emerging drug" in the 1996 edition of *The National Drug Control Strategy* (ONDCP 1996a). Rohypnol (flunitrazepam), of the benzodiazepine family of central nervous system depressants, is more commonly known on the street as "roofies" (see Note 1), "R-2," "rope," or "rib." Yet, Rohypnol has gained notoriety for its ability to render its users extremely disinhibited and

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helpless, earning the nickname "the date-rape pill." Although illegal in the United States, the drug is marketed by Hoffman-La Roche Inc., and is legally available throughout Europe, Asia, Latin America, and elsewhere. In fact, Rohypnol is the most widely prescribed sedative-hypnotic in Western Europe (NIDA, 1995), and more than 2.3 million doses are sold worldwide each day (Friend, 1996). Furthermore, Rohypnol is commonly misused in Europe, and in Mexico and South America, where it is sold over-the-counter for the treatment of insomnia, levels of misuse may be even higher (Bond et al., 1994). Consequently, in March of 1995 the World Health Organization moved Rohypnol from a Schedule IV to a Schedule III controlled substance (DEA, 1995a).

Rohypnol first appeared in the United States in the early 1990s, and reports of misuse of the drug have increased steadily since 1993. Typically, the greatest quantities of the drug arrive into the United States from Mexico and Columbia. One investigation generated the estimate that 1.4 million pills were being moved through the Laredo, Texas Mexican border crossing into the United States each year (Shephard and McKeithan, 1995). And, once in the United States, Rohypnol is sold at a street price ranging from $0.50 to $8.00 per pill, averaging about $3.00 a tablet (DEA, 1995b; Up Front Drug Information Center, 1994).

The National Institute on Drug Abuse's (NIDA) Community Epidemiology Work Group (CEWG) addressed the rapidly spreading misuse of Rohypnol among adolescents and young adults in South Florida and Texas. The use of Rohypnol is reportedly one of the fastest growing drug problems in both areas, and appears to be spreading rapidly across the United States (CEWG, 1995). Indeed, according to a University of Texas study, 43% of the people declaring prescription drugs over a 1-year period at a Mexican border were importing Rohypnol (Shephard and McKeithan, 1995). Furthermore, as of April 1995, the Drug Enforcement Administration (DEA) had documented over 1,000 cases of Rohypnol possession nationwide (DEA, 1995a), and by December 1995 the drug had been identified in at least 32 states (Hall, 1995). Moreover, as of June 1996, the DEA reported the number of federal, state, and local law enforcement encounters with Rohypnol to have reached over 2,700 (ONDCP, 1996b).

Until recently, Rohypnol was "legally" imported into the United States from among the more than 60 nations that permit its legitimate use. Although Rohypnol is a controlled substance, a 3-month supply for personal use was generally permitted to be brought into the United States if accompanied by a medical prescription. However, a DEA spokesperson explained that Customs officials were not strict about the prescription requirement, and that prescriptions, if evident, were often illegal. Much of the reason for the leniency about prescription drug importation has been related to informal policies adapted by

the DEA, US Customs, and the FDA (Federal Drug Administration) allowing antiviral and cancer drugs which are not available for sale in the United States to be brought into the country for treatment of HIV and other illnesses.

The influx of Rohypnol into the United States brought with it a myriad of problems. Misuse of this drug was soon found to be a growing threat to teenagers and young adults, and in March of 1996 the US Government responded by launching a strict prohibition on the importation of Rohypnol (*Washington Post*, 1996). Senator Joseph R. Biden hailed this decision as progress in the "war on drugs" (*Wilmington News Journal*, 1996), and President Bill Clinton, at the swearing-in ceremony of General Barry McCaffrey as Director of the ONDCP, maintained that the prohibition of Rohypnol was a step in protecting our children's futures (News Release, 1996).

Moving in the same direction, the Drug Enforcement Administration is currently attempting to reclassify Rohypnol from a Schedule IV drug indicating low potential for abuse, to a Schedule I drug which would designate Rohypnol as having no accepted medical use in the United States. In addition, the Health and Human Services Administration is now studying the medical effects of Rohypnol in efforts to aid decision-making regarding reclassification. As a Schedule I drug, Rohypnol would carry the same severe penalties for possession as do cocaine and heroin. However, other than this potential rescheduling and U.S. Customs Service efforts to intercept the drug at border crossings, there are currently no additional nationwide initiatives regarding misuse of Rohypnol (Hurlbut, 1996).

EFFECTS AND PATTERNS OF USE AND MISUSE

Rohypnol intoxication is characterized by sedative and such other potentially dangerous effects as extreme disinhibition, severe memory impairment or amnesia, muscle relaxation, gastrointestinal disturbances, visual impediment, and slowing of psychomotor performance. Hoffman-LaRoche includes its own warning about the risky properties of Rohypnol in the package insert which reads:

> Some patients may have no recollection of any awakenings occurring in the six to eight hours during which the drug exerts its action. (see Note 2)

When Rohypnol is combined with other sedatives, antidepressants, analgesics, or other tranquilizers, the sedative effect is intensified. Paradoxically, although Rohypnol is classified as a depressant, it has been found to induce excitability or aggressive behavior in some users (DEA, 1995a). The effects of Rohypnol are long-lasting, with blood levels peaking 1 to 2 hours after ingestion of

a 1-mg dose (see Note 3), and falling to one-half their peak after 16 to 35 hours (Smith et al., 1996). Although most commonly taken in the tablet form (a white pill slightly larger than an aspirin), the tablets are sometimes crushed and "snorted" to hasten the onset and intensity of effects (Bond et al., 1994; Harbilas, 1995). Use of Rohypnol can cause physical and psychological dependence, and once these have developed, withdrawal symptoms such as headache, muscle pain, extreme anxiety, and confusion may occur. Moreover, hallucinations, convulsions, delirium, shock, and cardiovascular collapse can also be induced by abstention.

Rohypnol is occasionally used as a primary intoxicant, but investigations reveal that when it is misused it is more often ingested along with alcohol (DEA, 1995a). Although it is seven to ten times more potent than diazepam (Valium), Rohypnol is unlikely to produce death when taken alone (like diazepam), even in cases of overdose. However, in combination with alcohol, Rohypnol can be lethal due to enhanced nervous system depression. Disinhibition, an extensively reported effect of Rohypnol, greatly increases when combined with alcohol. Rohypnol's disinhibitive effects have reportedly led to high-risk sexual activity (CEWG 1995). Furthermore, blackouts lasting several hours have been reported after ingestion of Rohypnol in combination with alcohol.

Dubbed the "date-rape drug of choice" by its adversaries and the "mind eraser" by its users, Rohypnol has quickly attained a bad reputation in the United States. One Broward County (Fort Lauderdale), Florida, assistant state attorney described Rohypnol as "Crime in a pill" (Pazdera, 1995). For example, as of February 1996, 10 men in Broward County have been arrested on "roofie rape" charges after slipping Rohypnol tablets into unsuspecting women's drinks and taking advantage of them sexually (Kidwell and Piloto, 1996). And, at the University of Florida in Gainesville, university police reported that in 1995 a dozen women had notified campus police after being unknowingly drugged with Rohypnol (Grudman, 1995). The account of one rape victim, a 25-year-old student at the University of California at San Diego appears to be typical. This woman believes that Rohypnol was put into a glass of wine she was consuming at a concert. She later woke up naked, and could not remember that she had been raped until sometime after its occurrence (Laboy, 1995). It should be pointed out that Rohypnol, once placed in a liquid, is colorless, tasteless, and dissolves easily, adding to the deceitful nature of its use in a crime.

Prosecuting cases where women claim to have been drugged by Rohypnol is especially difficult since these women may have suffered amnesia and thus cannot remember details of the crime. Nevertheless, there has been at least one successful prosecution of an individual who used Rohypnol in the commission of a crime. A Florida man who bragged to his friends that he had drugged a

dozen women with Rohypnol and then raped them, pleaded no contest to one count of sexually battering a helpless person and was subsequently sentenced to 8 years in prison (Seligmann and King, 1996).

There is evidence that the United States, once the trend-setter in emerging new drug misuse patterns, is becoming the recipient of such behaviors (NIDA, 1995). We have described the use of Rohypnol by men in the United States who drug women so as to take advantage of them sexually. The employment of Rohypnol as a tool in the enactment of a crime is reported to occur in Europe, although under a slightly different context. In Europe, prostitutes use Rohypnol to their advantage; it is common for sex workers to drop Rohypnol tablets into their clients' drinks and proceed to steal their wallets and other valuables after sedation occurs (see Note 4). Interestingly, however, despite its nefarious status in the United States, Rohypnol is said to have a respectable reputation throughout the rest of the world (Friend, 1996).

Rohypnol misuse in the United States has been reported primarily by adolescents and young adults. This is perhaps due to Rohypnol's relatively inexpensive price and its ability to increase the level of effectiveness of other drugs. As one university's police Victim Advocate Program coordinator explained:

> Kids see it as a cheap way to get intoxicated faster. Instead of a six-pack, it only takes one beer to get drunk. (Grudman, 1995)

The popularity of Rohypnol is enhanced by its long-lasting effects, providing the user with an extended period of intoxication.

A further explanation for Rohypnol's acceptance among youths may be due to the commonly held misperceptions about the drug (DEA, 1995a). First, many erroneously believe that Rohypnol tablets are unadulterated and therefore safe because they come in presealed bubble packs. Rohypnol is apparently seen as a viable alternative to cocaine or heroin and to other loose (unpackaged/unregulated) drugs purchased on the street. Second, it is mistakenly believed that the presence of Rohypnol cannot be detected by urinalysis testing.

Although Rohypnol use is most common among adolescents and young adults, other populations are reported to use the drug for varying reasons (see Bond et al., 1994). Heroin users are said to take Rohypnol to enhance the effects of low-quality heroin or methadone and to relieve withdrawal symptoms. Use of Rohypnol for this purpose has been reported by drug users in Spain, Malaysia, and elsewhere (DEA, 1995a). Similarly, cocaine users have been found to use Rohypnol to ease the intensity of the "crash" following cocaine and crack binges (Up Front Drug Information Center, 1994).

POSTSCRIPT

It would be difficult to speculate as to whether the misuse of Rohypnol in the United States is a transient fad or a potential "epidemic." Without ques-

tion, however, the drug has attracted the attention of many. Youths in some communities have been observed wearing T-shirts displaying the chemical formula for Rohypnol (ONDCP, 1995). There is also a song titled "Rohypnol," recently recorded by an alternative rock group known as Starfish. Regardless of the potential future of Rohypnol misuse in the United States, it is important to be aware of use and distribution patterns, and to begin prevention and treatment efforts (CESAR, 1995). The Minnesota Department of Human Services' Chemical Dependency Program Division reported in a recent drug alert that:

> For professionals involved in prevention, the challenge is how to warn young girls about the predatory use of Rohypnol without teaching young boys how to do it. (*IMPACT*, 1995)

Along these lines, the manufacturer of Rohypnol, Hoffman-LaRoche, has generated an ad campaign promoted on radio, television, and in print public service announcements cautioning women about the potential dangers of this drug. One ad shows a photograph of a man's hand holding a drink beneath the words "WOMEN BEWARE!", and a television spot shows a man slipping a tablet into a woman's drink while she is distracted by friends (Fields, 1996).

The state of Florida has initiated measures to combat the recent influx of Rohypnol. In the southern portion of the state, impaired drivers are now screened for flunitrazepam intoxication when they appear drunk but register low blood-alcohol levels (CEWG, 1995); medical examiners test for the presence of Rohypnol in drug-related deaths; and there are more severe penalties for rape cases which involve the drugging of the victim with Rohypnol (Hall, 1995).

As mentioned above, Rohypnol's manufacturer is also greatly concerned about the misuse of its product. The Swiss-based firm is considering discontinuing the manufacture of the 2-mg pill and marketing a less potent version (Seligmann and King, 1996). In addition, Hoffman-La Roche is funding the distribution of educational fliers on Rohypnol to members of the health-care industry and law-enforcement agencies, and has initiated studies to learn more about the patterns of misuse surrounding the drug (Hopper, 1995; Laboy, 1995). Most recently, Hoffman-La Roche has announced that it is working on a formulation of Rohypnol that will not dissolve so quickly or easily when placed into liquids (Fields, 1996).

NOTES

1. Although correctly pronounced ro-hip-nol, this drug is commonly mispronounced ru-fi-nol, perhaps lending explanation to the origin of its most popular street named "roofies" or "ruffies." An alternative derivation of this street name has been offered which credit roof

repairers. Many roofers who moved to Southern Florida after the Hurricane Andrew disaster (often from Mexico) were said to have brought Rohypnol with them and thus may have popularized its use.

2. Package insert for Rohypnol, provided by Hoffman-La Roche & Co., Ltd., Basel, Switzerland.
3. Rohypnol is currently available in 1 or 2 mg tablets. A therapeutic dose varies from 0.5 mg to a maximum of 2 mg.
4. Personal communication with Dr. Zuzana Panisova, General Secretariat of the Board of Ministries for Drug Dependencies and Drug Control, Office of the Government of the Slovak Republic, June 4, 1996.

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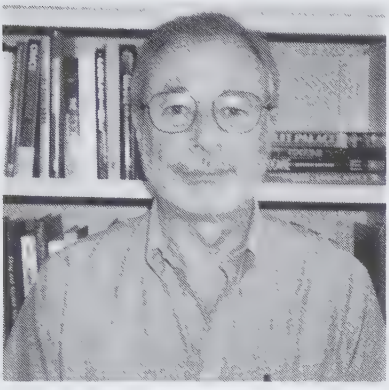

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Measurements, Instruments, Scales, and Tests

Drug Dependence Scale in the Millon Clinical Multiaxial Inventory

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ABSTRACT

The Millon Clinical Multiaxial Inventory (MCMI versions I, II, and III) includes a scale to assess drug use problems, Scale T-Drug Dependence. Detailed drug use data from a sample of 659 known drug users along with MCMI-II results were examined to determine the operating characteristics of the MCMI-II drug dependence scale. Operating characteristics, sensitivity, specificity, positive predictive power, negative predictive power, and overall diagnostic power were calculated for base rate cutoffs and for the number of prototypic items endorsed to determine the diagnostic efficiency of Scale T-Drug Dependence in identifying regular drug users. Prototypic item cutoffs provided higher levels of diagnostic and positive predictive power than did the standard base rate cutoffs.

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Key words. Drug dependence; MCMI; Substance use

INTRODUCTION

With the prevalence of drug-use-associated problems among clinical populations, it has become increasingly important to assess personality, associated symptomatology, and drug use disorders adequately and concurrently. Criteria for identifying substance use disorders, particularly drug dependence, have been established in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV) (American Psychiatric Association [APA], 1994). Diagnostic assessment practices to determine substance-use-associated problems vary considerably and often involve the use of standardized inventories.

The Millon Clinical Multiaxial Inventory (MCMI), a self-report clinical assessment instrument, is becomingly widely used with substance misuser treatment populations. It contains clinical syndrome and personality scales corresponding with DSM Axis I and II disorders, as well as a scale to assess drug-use-associated problems, Scale T-Drug Dependence. MCMI scales were designed to assess a syndrome based upon a comprehensive theory of personality and psychopathology (Millon, 1987). High scores on the drug-dependence scale indicate a history of drug misuse and troublesome and impulsive behavior (Millon, 1987). Items directly related to drug misuse are heavily weighted on the scale, and items more subtly related to drug-misuse-associated problems are less heavily weighted. Since its first development and use over two decades ago, the MCMI has undergone several revisions from the original MCMI to the current version, MCMI-III. Each subsequent version has included a drug-dependence scale (Scale T) to identify patients who have drug-misuse-associated problems. Base rate cutoff scores, which are reported for each MCMI scale, are transformed raw score cutoffs formulated to correspond to the prevalence of a disorder in the national norming sample (McMahon, 1993). A base rate score above the cutoff would indicate the presence or prominence of the disorder associated with the scale. For example, with Scale T, patients scoring at or above the base rate cutoff would have a high likelihood of a history of drug misuse or addiction (Millon, 1994). The MCMI-II uses a weighting schema and prototypic items that are the most representative of the disorder assessed by a particular scale. These items have high face validity as criterion items associated with DSM criteria and receive the highest weight in scoring the instrument. In theory, the MCMI drug scale should assess drug-misuse-associated problems and severity through its base rate referencing system and cutoff scores.

Research on the MCMI drug-dependence scale has been conducted, and its validity is inconclusive (Craig, 1993). Bryer et al. (1990) examined the

ability of the alcohol and drug misuse scales of the original MCMI to identify known misusers and found that, using a base rate cutoff of 75, the scales correctly classified 49% of the drug misusers in their sample. Calsyn et al. (1990) found that they could correctly classify 39.4% of a male veteran sample seeking treatment for cocaine or opioid dependence using an MCMI base rate cutoff of 75 on the drug scale. In a later study, Calsyn et al. (1991) were able to correctly classify 49% of their subjects using the MCMI and a base rate cutoff of 75. In an MCMI study of opioid misusers, Marsh et al. (1988) found that 49% of their subjects scored at or above a 75 base rate cutoff score.

In their methodological study, McCann et al. (1992) examined the borderline personality disorder scale of the MCMI-II and found greater diagnostic efficiency when a cutoff score based on the number of endorsed prototypic items was used as compared to standard base rate cutoffs. Their hypothesis about the diagnostic performance of MCMI scales perhaps being better when controlling for item overlap by focusing on prototypic items was confirmed in their study of the MCMI borderline scale. As demonstrated by their research, this methodology and hypothesis about prototypic items and scale performance have potential applicability with other MCMI scales and clinical populations.

The purpose of the present study was to examine the operating characteristics of the drug-dependence scale of the MCMI among a large clinical sample entering treatment for their drug-use-associated problems and to determine the diagnostic efficiency of several alternative cutoff parameters that could be used with MCMI-II Scale T to identify regular drug users. The concept of regular drug use was a key measure in nationwide studies in the United States and was operationally defined as weekly or daily use of a drug during the past year (cf. Hubbard et al., 1989). More recently, regular drug use has been shown to be a marker or proxy for *DSM-III-R* (APA, 1987) drug dependence (Hubbard, 1995). Thus, it was determined that contrast groups of regular and infrequent drug users could provide an empirical basis for specifying and assigning alternative MCMI criterion cutoff scores that could be used to provide more precise estimators of drug-use-associated problems when using the MCMI Scale T. For purposes of this study, regular drug use was operationally defined as weekly or more frequent use of any drug, excluding alcohol, during the 12 months prior to treatment admission.

METHOD

Subjects

Participants for this study were 659 subjects involved in the Washington, DC, Diagnostic, Referral, and Data Management Unit study (the "DC Initiative"). This Initiative was a cooperative research study jointly funded by the

National Institute on Drug Abuse (NIDA) and the Center for Substance Abuse Treatment (CSAT) to evaluate alternative treatment strategies and increase the availability of drug treatment in the District of Columbia (DC). Eligibility criteria for participation in the DC Initiative were as follows: 18 years or older; a DC resident; not currently participating in another drug treatment program; not on a DC Alcohol and Drug Abuse Services Administration (ADASA) restricted list for past failure to cooperate in an ADASA-managed treatment program; not currently suffering from active psychiatric symptoms that might have interfered with treatment (schizophrenia, suicidal thoughts, severe anxiety); not currently pregnant or physically challenged due to the architectural layout and limited medical coverage at the treatment facilities; and willing to undergo regular drug testing and comply with research interviews, psychological testing, and treatment protocols.

Potential patients seeking outpatient abstinence or methadone treatment had to be able to function in an outpatient treatment setting. Those seeking therapeutic community (TC) treatment had to be unable to function in an outpatient treatment setting (due to legal constraints, personal reasons, or repeated outpatient treatment failures), and be able to spend up to 1 year in the residential facility. Additionally, potential TC patients were not eligible if they had been arrested in the past 7 years before admission for arson, rape, murder, assault with intent to murder, kidnapping, or other violent acts; they also were ineligible if they needed hospitalization for either detoxification or other medical problems. As shown in Table 1, the mean age of the sample was 36 years, the mean years of education was 11 years, and the majority of the subjects were male (71%), African-American (91%), and never married (57%).

In general, the majority of subjects ($N = 659$) reported that their primary problem drugs were either heroin alone or in combination with other drugs (56.3%) or cocaine or crack (37.3%). Similarly, when asked about their favorite drug or drug of choice, use of heroin alone or in combination was reported by 59% and cocaine or crack by 30%.

Procedure

Subjects were recruited from the ADASA 24-hour walk-in substance user clinic; the ADASA Criminal Justice Division; the ADASA Central Intake Division (CID); the 7-day drug detoxification ward at the Washington DC General Hospital; a community resource center in the Marshall Heights section of DC; waiting lists for Second Genesis TC programs; and from jails run by the DC government.

Treatment placement determinations followed the aforementioned eligibility criteria and generally were made in accordance with patient preferences and

Table 1.

Selected Demographic and Treatment Characteristics by Frequency of Any Drug Use (excluding alcohol) During the 12 Months before Treatment (%)[a]

Demographic characteristic	Less than weekly or no use (n = 101)	Weekly or more frequent use (n = 558)
Age:		
Mean years	32.9	36.3
Age ranges (years):		
20–25	14.9	6.5
26–30	31.7	16.7
31–35	20.8	22.4
36–40	14.9	28.7
Over 41	17.8	25.8
Gender:		
Female	9.9	31.9
Race/ethnicity:		
African-American	89.1	91.2
Other	10.9	8.8
Marital status:		
Married	16.8	18.3
Never married	62.4	56.1
Separated/divorced/widowed	20.8	25.6
Education:		
Mean years	11.0	11.5
Employment:		
Full-time	2.0	10.9
Sources of income:		
No income	20.8	7.5
Legitimate work	17.8	43.0
Public assistance	3.0	5.7
Social security	1.0	1.1
Family/friends	36.6	13.6
Illegal	18.8	25.8
Other	2.0	3.2
Served on active military duty:		
Yes	12.9	12.9
Reason for entering treatment:		
Needing lifestyle change	81.3	76.5
Criminal justice related	7.7	6.0
Other	11.0	17.5
Number of children living in household:		
No Children	87.0	72.0
1 Child	3.0	11.9

(*continued*)

Table 1. *Continued*

Demographic characteristic	Less than weekly or no use (n = 101)	Weekly or more frequent use (n = 558)
2 Children	7.0	9.4
3+ Children	3.0	6.7
Most serious problem drug:		
No problem drug	3.0	0.5
Alcohol	10.9	1.3
Cocaine or crack	58.4	33.5
Heroin alone or in combination with other drugs	23.8	62.2
Other drugs	3.9	2.5
Favorite Drug:		
Cocaine or crack	41.6	28.1
Heroin alone or in combination with other drugs	32.6	63.9
Other drugs	25.8	8.0
Current legal status:		
No status	18.8	53.0
In jail	3.0	2.2
Probation	53.5	31.2
Parole	22.8	7.0
Case pending	2.0	6.6
Self-assessment of health:		
Excellent	42.6	21.0
Good	44.6	50.4
Fair	10.9	25.6
Poor	2.0	3.1
Treatment:		
Methadone	4.0	53.9
Long-term residential	96.0	46.1

[a]Overall sample includes subjects who had valid MCMI-II scores and nonmissing data on any drug use.

the recommendation of the intake physician. Most patients under a court mandate was placed in TC facilities. Random assignments were made within treatment modalities. Those placed in outpatient treatment were randomly assigned by Diagnostic Unit staff to either the standard (control) or enhanced (experimental) outpatient facility. Those who were determined eligible for TC treatment were randomly assigned to either the standard or enhanced TC facility.

The intake assessment was administered by trained research staff and included a structured intake interview, the Individual Assessment Profile ([IAP]

Flynn et al., 1995), and a clinical assessment battery that included the MCMI-II. Research interview staff generally consisted of young (ages 25 to 40) African-American men and women with 2 to 4 years of college, usually with a bachelor's degree in the social sciences, and approximately one-fourth were in recovery.

The IAP took approximately 45 to 50 minutes to administer and included detailed background and admission information and in-depth questions regarding living arrangements; drug, alcohol, and tobacco use; illegal activities; sources of support; health; treatment history and mental health; and interviewer comments and observations. The clinical battery that included the MCMI was administered approximately 2 weeks after admission to treatment. As part of the clinical battery, the Reading Comprehension Test from the Peabody Individual Achievement Test-Revised was used to assess reading ability prior to administration of the MCMI, which requires approximately an eighth-grade reading level.

Used in analyses were all valid MDMI-IIs that were matched with an intake interview that in turn included detailed substance use information. The analyses involved the calculation of percentages, frequencies, and other univariate descriptive statistics that summarized key data and described the sample. MCMI-II Scale T-drug dependence operating parameters were calculated to determine the optimum base rate and number of prototypic item endorsement cutoffs that could be used to identify regular drug users. These parameters included sensitivity, specificity, positive predictive power, negative predictive power, and overall diagnostic power. For a detailed discussion of these operating characteristics and their formulas, see Gibertini et al. (1986).

RESULTS

MCMI-II scale means and standard deviations are shown in Table 2, and indicate that the group using drugs infrequently (less than weekly or no use) had a higher mean Scale T base rate score (84.6) than did the group of regular (weekly or more frequent use of any drug, excluding alcohol, during the 12 months prior to treatment admission) drug users (78.4). Standard base rate scores also indicated that the group using drugs infrequently had a higher median Scale T score (85) than did regular users (78); however, in the aggregate, both groups scored above standard base rate cutoffs.

The profiles of median MCMI-II scale scores were similar for both infrequent and regular drug users, with the infrequently using group having slightly higher elevations on most scales (see Fig. 1).

Table 3 shows the operating characteristics for various cutoff criteria. Basically, sensitivity is the probability that the MCMI-II Scale T will indicate

Table 2.

Means (and Standard Deviations) for MCMI-II Base Rate Scores by Frequency of Any Drug Use (excluding alcohol) During the 12 Months before Treatment

Scale	Less than weekly or no use (n = 101)	Weekly or more frequent use (n = 558)
X-Disclosure	73.58 (16.57)	65.17 (21.45)
Y-Desirability	71.98 (16.24)	68.22 (17.78)
Z-Debasement	55.79 (17.76)	50.76 (18.70)
1-Schizoid	63.01 (22.36)	61.55 (20.36)
2-Avoidant	68.83 (25.02)	64.12 (25.66)
3-Dependent	57.81 (27.81)	62.00 (27.02)
4-Histrionic	71.48 (19.86)	69.51 (17.91)
5-Narcissistic	79.42 (21.44)	75.98 (20.62)
6A-Antisocial	87.22 (20.06)	77.95 (19.72)
6B-Aggressive/Sadistic	81.13 (21.02)	70.92 (20.09)
7-Compulsive	66.04 (19.39)	64.05 (17.50)
8A-Passive-Aggressive	73.24 (27.06)	63.04 (28.41)
8B-Self-Defeating	69.86 (20.05)	62.88 (23.07)
S-Schizotypal	67.74 (14.97)	62.61 (15.33)
C-Borderline	73.95 (17.43)	68.34 (19.21)
P-Paranoid	72.19 (15.00)	66.96 (17.17)
A-Anxiety	45.02 (24.21)	47.38 (26.33)
H-Somatoform	53.10 (14.16)	55.22 (15.90)
N-Bipolar:Manic	61.40 (18.15)	56.70 (15.33)
D-Dysthymia	53.11 (24.85)	50.01 (25.87)
B-Alcohol Dependence	75.16 (12.76)	69.31 (16.76)
T-Drug Dependence	**84.57 (14.64)**	**78.44 (15.48)**
SS-Thought Disorder	58.72 (15.41)	54.43 (18.04)
CC-Major Depression	52.96 (12.84)	48.52 (18.88)
PP-Delusional Disorder	62.38 (12.29)	57.93 (16.65)

the presence of drug-use-associated problems at the specified cutoff criterion when the patient is a regular drug user; specificity is the probability that the scale score will be below the cutoff when the patient is an infrequent drug *user* and not a regular user; positive predictive power is the probability of regular drug use when the scale score is above a cutoff; negative predictive power is the probability of being an infrequent drug user when the scale score is below the cutoff; and diagnostic power is the percentage of correct classifications at a given cutoff.

In general, cutoff points for the number of prototypic items endorsed on Scale T-Drug Dependence showed higher levels of diagnostic power than did the standard base rate cutoffs of 75 and 85. The highest levels of positive

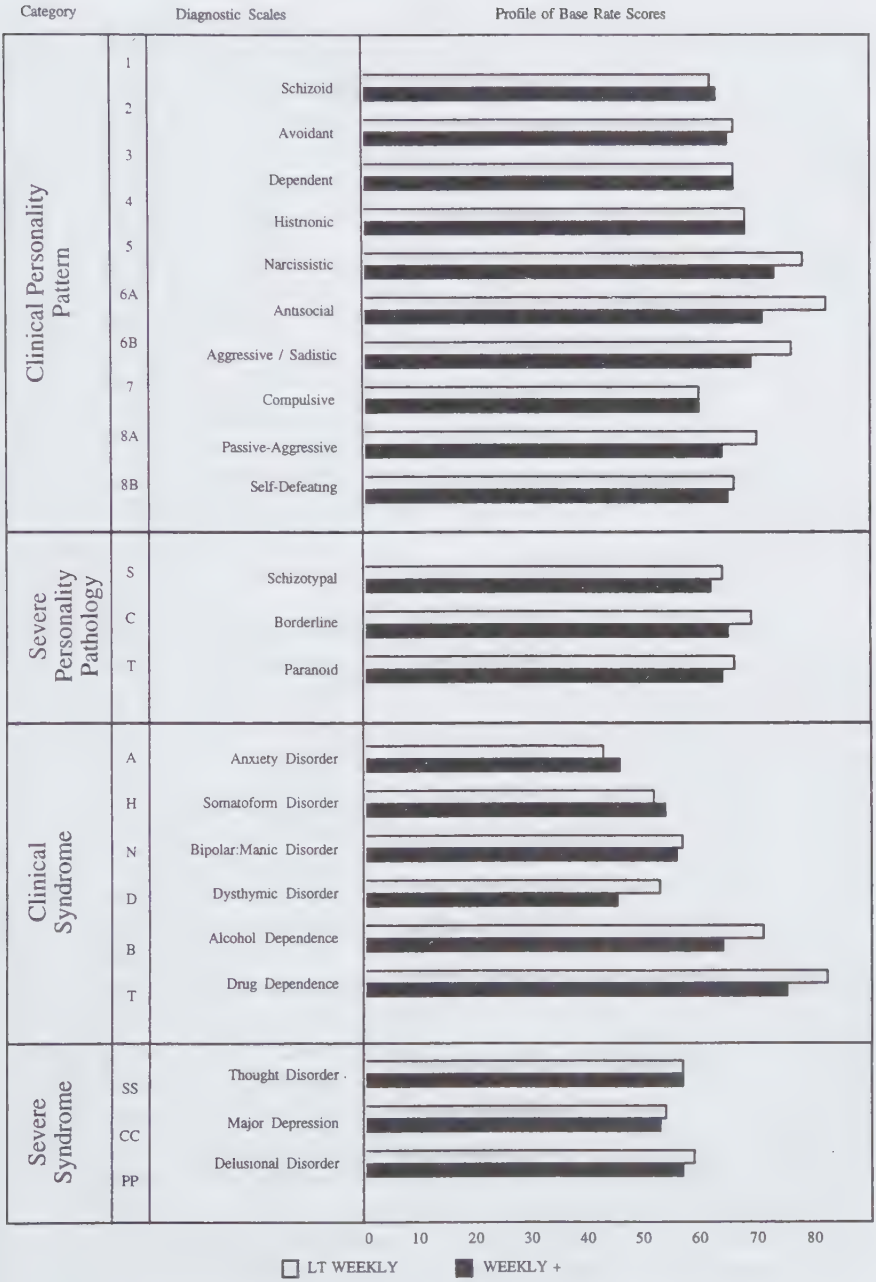

Fig. 1. Median MCMI-II base rate scores by drug use frequency.

Table 3.

Diagnostic Efficiency of Scale T in Identifying Weekly or More Frequent Use of Any Drug (excluding alcohol) During the 12 Months before Treatment[a]

Cutoff criteria	*n* (*N* = 659)	Sens	Spec	PPP	NPP	DxP
BR > 74	399	58.8	29.7	82.2	11.5	54.3
BR > 84	260	37.5	49.5	80.4	12.5	39.3
Prototypic items:						
≥1	654	99.1	[b]	84.6	[b]	83.9
≥2	639	96.6	01.0	84.4	05.0	81.9
≥3	610	93.0	09.9	85.1	20.4	80.3
≥4	534	81.0	18.8	84.6	15.2	71.5
≥5	389	58.4	37.6	83.8	14.1	55.2
≥6	137	21.5	83.2	87.6	16.1	31.0

[a]BR = Base Rate; Sens = Sensitivity; Spec = Specificity; PPP = Positive Predictive Power; NPP = Negative Predictive Power; DxP = Overall Diagnostic Power. Overall prevalence of regular drug use was 84.7.
[b]Too few data for reliable estimation.

predictive power, or the probability that a patient was a regular drug user given a score at or above the cutoff, were shown among prototypic item cutoff criteria. Positive predictive power was above 80% for any of the prototypic item cutoffs, and negative predictive power was highest when a cutoff of three or more prototypic items was used as a criterion for differentiating regular and infrequent drug users.

DISCUSSION

Both mean and median MCMI-II Scale T-Drug Dependence scores for the two groups of drug misusers seeking treatment (infrequent and regular users) indicated the presence of drug-use-associated problems among the sample. It thus provided further evidence of the scale's ability to identify recent or recurrent drug user problems. Findings that prototypic and/or nonoverlapping item cutoffs yielded higher levels of diagnostic and positive predictive power than base rate cutoff scores highlight the importance of item-level analyses. Further, these results are consistent with research results from several MCMI-II personality scale studies (cf. McCann, 1991; McCann et al., 1992).

When faced with conflicting information, such as clinical evidence of drug-use-associated problems and a negative or nonconfirmatory MCMI-II profile report with a Scale T base rate below 75, or the obverse of this discrepant situation (i.e., no history of drug-use-associated problems but positive MCMI-

II results), item-level analyses may provide additional information that could be used to formulate a more dynamic understanding and richer clinical picture. The utility of prototypic test items and nonoverlapping items to inform clinical judgments was demonstrated in this study. It should be emphasized that significant information can be gleaned from individual item responses, information beyond that provided in empirically and psychometrically developed indices, particularly in clinical cases that present discrepant information.

Future research should continue to examine alternative cutoff score criteria and study supplemental information obtained from self-reports that can be used to provide a more dynamic understanding of presenting problems and establish a clinically richer patient picture. Limitations of the present study may include the criterion (infrequent vs regular) used to assess the performance of the MCMI-II in identifying drug-use-associated problems. The two groups in this study were operationally defined based on frequency of drug use. Moreover, the infrequent and regular users in our sample appeared to be very similar across the other dimensions measured by the MCMI-II. Thus, the lack of clearly distinguishable comparison groups may have contributed to the failure of Scale T base rate scores to differentiate the groups, resulting in both groups having scores above the diagnostic cutoff (base rate ≥ 75).

The similarity between frequent and infrequent drug misusers may be in the shared psychological characteristics of these substance misuse groups; this may be what is being measured by the complete set of items on Scale T. In fact, Millon (1987) noted that the use of items measuring personality traits went into the composition of Scale T. However, infrequent and regular users also differ in the regularity and frequency of their drug use. Because prototypic items demonstrated better diagnostic power than did Scale T base rate scores, this suggests that active drug use may be more effectively assessed with the face valid prototypic items that reflect substance misuse on the MCMI-II. These prototypic items in the MCMI-II (items 35, 70, 105, 140, 144, 175) are provided in the MCMI manual.

Future studies may need to consider several criteria or indicators, such as the one used herein concomitantly with several other sources. These might include *DSM-IV* (APA, 1994) diagnostic assessments of drug dependence obtained from clinical interviews, as well as those obtained from such assessment instruments as the Structured Clinical Interview for DSM (Spitzer et al., 1987), the Diagnostic Interview Schedule (Robins et al., 1981; World Health Organization, 1990), or the Composite International Diagnostic Interview (Robins et al., 1988). The use of additional assessment methods and instruments could provide a more rigorous multimethod and multisource means of drug problem identification that could set a standard against which the diagnostic efficiency of the MCMI could be determined.

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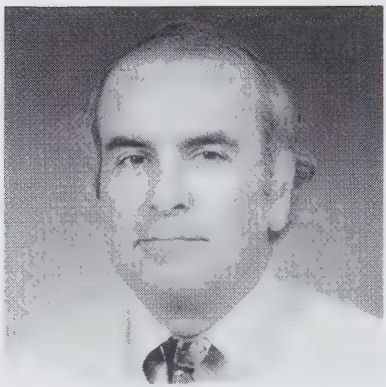
RESUMEN

El Inventario Clínico Multiaxial de Millon (Millon Clinical Multiaxial Inventory, o MCMI; versiones I, II, y III) incorpora una escala--Escale T, Dependencia de Drogas—que se usa para evaluar los problemas, de individuos que usan drogas. Los autores del estudio examinaron datos detallados sobre el uso de drogas, tomando como base una muestra de 659 personas drogadíctas y los resultados del MCMI-II, para determinar las características operacionales de la Escala T del MCMI-II. Las características operacionales, la sensibilidad, la especificidad, los poderes positivos y negativos de predicción y el poder de diagnóstico general se calcularon para las razones básicas límites (base-rate cutoffs) y para el número de elementos prototípicos garantizados, para determinar la eficiencia en el diagnóstico de la Escala T de Dependencia de Drogas para identificar individuos que regularmente usan drogas. Los límites en el número de elementos prototípicos presentaron niveles más altos de poder de diagnóstico y de poder positivo de predicciones que los producidos por los límites normales de la rázon básica.

RÉSUMÉ

L'Inventaire Clinique Multiaxial de Millon (MCMI, versions I, II, et III) comprend une échelle (Echelle T, Dépendence aux Drogues) qui sert à évaluer les problèmes des individus qui utilisent les drogues. Les données détaillées sur l'utilisation des drogues, tirées d' un échantillon de 659 personnes connues comme vrais utilisateurs des drogues ainsi que les résults produits par l'Inventaire Clinique Multiaxial de Millon (MCMI-II), ont été examinés afin de déterminer les charactéristiques opérationnelles de l' Echelle T de MCMI-II. Les charactérisques opérationnelles, la susceptibilité, la specificité, le pouvoir positif et négatif de faire des prédictions, et le pouvoir global de faire la diagnostique ont été calculés en fonction des taux limites de base et le nombre d' items type pour déterminer l'éfficacité de la diagnostique de l' Echelle T de Dépendence aux Drogues (Scale T-Drug Dependence) dans le processus d' identifier les utilisateurs réguliers des drogues. Les items type ainsi choisis ont produits des niveaux plus élevés concernant la capacité de faire la diagnostique et les prédictions que ceux produits par les taux limites de base standardisés.

THE AUTHORS



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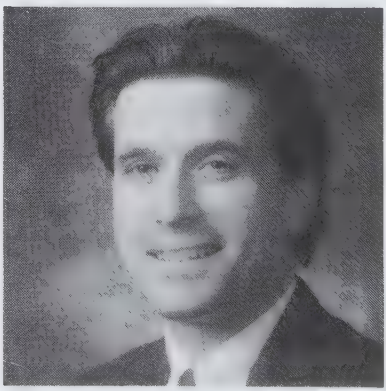

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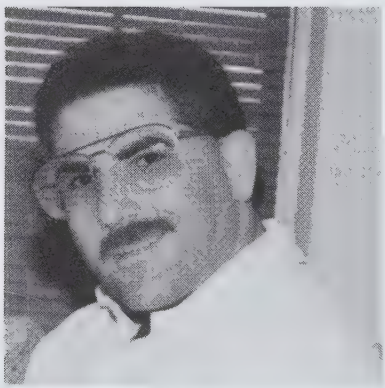

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Toward the Year 2000

Drugs, Crime, and HIV

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ABSTRACT

The use of criminal justice authority is discussed as a possibility for keeping drug users in treatment to decrease drug use, decrease injection, and to reduce the spread of HIV. It is hypothesized that the perception of treatment and control is a central factor in the limited use of criminal justice authority by community drug treatment providers.

Key words. Drugs; Criminal justice; HIV

Interventions for drug users include a range of approaches from treatment within the health and welfare system, exemplified by Spain, to mixed health/criminal justice approaches used in the United States. Despite these different approaches, criminal justice referral to treatment for drug users is low in both countries even though criminal justice authority could be used to keep drug users in drug use treatment and decrease the spread of HIV.

The criminal justice system in the United States and Spain are overflowing with drug users. Drug testing data from the Drug Use Forecasting (DUF) system indicate, from a purposive sample of 24 major United States cities, that about 50% of those who come into contact with United States jails and lock ups are using a drug other than alcohol at the time of their arrest (NIJ, 1994). In 1986 the US Bureau of Justice Statistics (BJS) reported that over 40% of

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state prison inmates were using drugs daily or almost daily before their offense and that 35% said they were under the influence of a drug at the time they committed their offense. Probation populations in the United States increased by 126% from December 1980 to December 1990, which was parallelled by a 107% growth for parole and 114% for prison populations (BJS, 1990). This increase is expected to continue, largely by drug users. Data from the Spanish Ministry of Justice and Interior in 1994 indicated that 46% of prisoners were using heroin and that 39% were using cocaine in 1993 (Ministerio de Justicia e Interior, 1994). Other Spanish data from prisoners revealed that 46% were using heroin and/or cocaine at the time they were incarcerated in 1995 (Ministerio de Justicia e Interior, 1994, 1995).

HIV seroprevalence is higher among United States prisoners and jail inmates than in the overall United States population. In 1993, 2.4% of federal and state prisoners and 1.8% of those in United States jails and detention centers were infected with HIV. Infection rates were highest among prisoners in the Northeast at 7.4% and among females at 4.2% compared with 2.5% for males (Brien, 1995). Twenty-five percent of United States prison inmates reported they had injected drugs and 12% reported sharing needles (BJS, 1991). Participation in community treatment for drug users by injectors in the United States, which is usually methadone maintenance, has produced significant reductions in drug-use risk behaviors among injectors. For example, over 80% of patients who left methadone maintenance treatment prematurely relapsed to injection drug use within 12 months (Ball et al., 1988). In addition, Metzger et al. (1993) reported that injectors who were not in methadone treatment after 18 months were five times more likely to become infected with HIV (22%) than those who remained in methadone treatment (4%).

Court referral to treatment is low. For example, United States data (Hubbard et al., 1989) indicated that about 30% of drug users in outpatient and residential treatment were referred to community treatment by the criminal justice system but less than 3% of referrals to methadone maintenance treatment were by the justice system. Spanish data from the Sistema de Evaluacion Asistencial of the Regional Plan on Drugs of Galicia indicate that 1% of drug users receiving outpatient treatment were referred by courts. In addition, 0.3% of patients who entered naltrexone maintenance, 3% of those who entered day care/intensive outpatient treatment, and 0.4% of those in methadone maintenance were referred by the courts in 1994 (Conselleria de Sanidade e Servicios Sociais, 1995).

The appeal of using criminal justice authority as external motivation is that it is one of the most consistent indicators for increasing the length of time an individual remains in community treatment for drug users (Cook et al., 1988, Gerstein and Harwood, 1990). For example, the Treatment Outcome Prospec-

tive Study (TOPS) replicated other studies with findings that drug users in community corrections remained in treatment longer (mean = 28 days) and those referred by TASC remained in treatment nearly twice as long (Leukefeld and Tims, 1988). Although criminal justice authority can bring an individual into drug use treatment, it can not force motivation or treatment participation (Leukefeld and Tims, 1988). However, addicts who stopped daily use while in treatment committed fewer crimes than those who quit outside treatment (Simpson and Sells, 1990).

The reluctance to use criminal justice authority in community drug treatment programs includes the limits criminal justice authority has on an individual's civil liberties and limitations placed on due process. This may be coupled with the distinction that many people put on differences between *treatment* and *control* since most of us think about treatment and control at opposite ends of the same continuum (Leukefeld et al., 1992). In other words, treatment is *helpful* while criminal justice authority is *controlling*. Many treatment providers indicate that authority derived from the criminal justice system is disruptive to the therapeutic process and that they treat different, not similar, clients than those involved in the criminal justice system. In fact, most people place treatment at one end of a continuum and control at the other end of the same continuum (Leukefeld et al., 1992). Treatment modalities/approaches and specific programs are usually unconsciously placed on this continuum to categorize them by degree of control or treatment (Leukefeld and Tims, 1988).

Figure 1 presents another way of looking at treatment/control. With this model, treatment and control are distinct but related concepts on two continuua rather than one: 1) Treatment represented as the degree of treatment from high

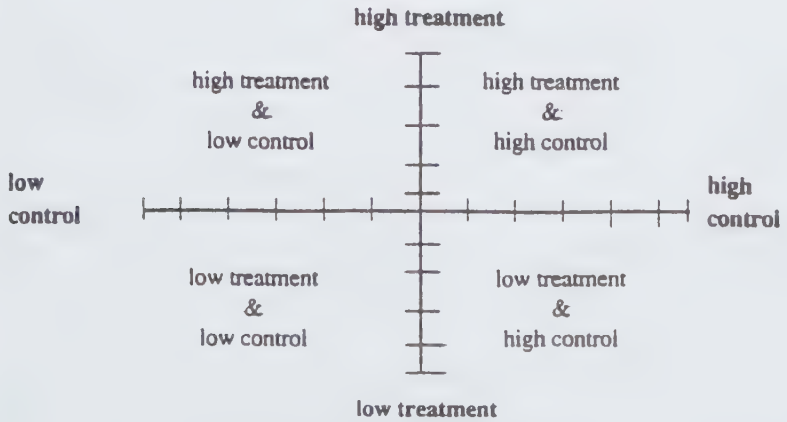

Fig. 1. Treatment and control model.

to low, and 2) Control represented as the degree of control from high to low (Leukefeld et al., 1992). These concepts can now be mapped on perpendicular axes. Thus, treatment and control can be conceptualized to include the degrees and combinations of treatment and control. In other words, combinations of treatment/control interventions can be separated into four quadrants from high to low combinations of treatment and control. Each combination will have its own "demands," advantages, and limitations as well as unresolved issues.

A therapeutic community, for example, which is a most frequent type of treatment referral by United States judges, is very high in control and very high in treatment (DeLeon, 1988) and could be placed in the upper right quadrant of the model. On the other hand, outpatient counseling, the most available treatment in the United States for about 60% of those receiving treatment for drug use (Gerstein and Harwood, 1990), would be placed as low treatment and low control in the lower left quadrant of the model. The availability of outpatient counseling is most probably related to having the lowest cost of all treatments for drug use. Intensive outpatient treatment would be placed in the upper left-hand quadrant of the model and would represent high treatment and low control since clients return "home" and do not live in the treatment facility. Halfway house facilities, traditional methadone maintenance treatment programs, and collecting urine alone are examples of low treatment and low control approaches which would be placed in the lower right-hand quadrant of the model. The use of judicial authority should increase control and treatment retention, a goal which would enhance treatment, especially for outpatient treatment. This is, of course, relative. But it provides a way of conceptually presenting expectations related to enhancing treatment retention and changing behaviors within an overall model.

Treatment engagement as internal motivation is also important. However, engagement and motivation are not the same although they are frequently associated. On the one hand, motivation and engagement are broad responsibilities of everyone involved in the treatment process, particularly clinicians and clients. Motivation, on the other hand, focuses on specific players, especially clinicians and the criminal justice system. Most of the literature in the area of motivation and treatment for drug use has focused on external motivation from the criminal justice system as noted above (see Leukefeld and Tims, 1988). Unfortunately, our understanding of internal motivation and engagement is more limited. However, there is support for the role of internal motivation as a predictor of retention and positive treatment outcome (see DeLeon and Jainchill, 1986; Farabee et al., 1993). Current interest in behavior change is frequently grounded in Prochaska and DiClemente's (1986) stage model of change with emphasis on the initial stages. Although the available options for measur-

ing engagement and change can be quite complicated and different for each, we can look forward to further advances in this area (see DeLeon et al., 1994; Simpson et al., 1995; Prochaska et al., 1992).

In conclusion, there is a body of research which generally indicates that the use of criminal justice authority has been useful in keeping individuals in drug treatment, reducing drug use, and decreasing injection. Thus, criminal justice authority could maximize community treatment for users and decrease HIV among injectors. However, community treatment providers are reluctant to use court authority to enhance treatment. It is important to consider cultural, societal, and national acceptance of the use of criminal justice authority. Knowledge based on science can be masked by ideology, which could be the case with the use of criminal justice authority. Thus, giving up individual freedoms, both real and symbolic, is at issue when the use of criminal justice authority is considered. However, regardless of ideology, this possibility can be informed with data. Perhaps we will ignore these data and keep going—or perhaps not.

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RESUMEN

Se discute la posibilidad de que la remision judicial favorezca la retencion en tratamiento de drogodependientes, disminuyendo el consumo de drogas, la

utilizacion de la via intravenosa y reduciendo la difusion del VIH. Se considera la hipotesis de que la percepcion de lo terapeutico y del control es un factor principal en la poca utilizacion que se hace de la autoridad judicial en los tratamientos ambulatorios para drogodependientes.

RÉSUMÉ

On discute de la possibilite d'avoir recours aux instances de la justice criminelle afin de garder les consommateurs de drogue sous traitement, et par la, de reduire la consommation de la drogue, la frequence des injections et la propagation du HIV. Nous formulons l'hypothese que la perception de traitement et de controle est un facteur central dans le recours limite aux instances de la justice criminelle par les centres communautaires de traitement antidrogue.

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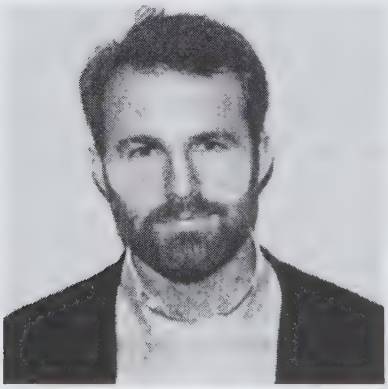

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Social Pharmacology

The Rules of Drug Taking: Wine and Poppy Derivatives in the Ancient World. VI. Poppies as a Source of Food and Drug

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ABSTRACT

Poppies were widely used during antiquity as a source of food, therapeutics, and poisons. It is likely that the alimentary value of poppy seeds was known in the Neolithic age, and there is some evidence that the neuropsychopharmacological effects of poppy juice were exploited during the Minoan civilization in the eastern Mediterranean basin. The Minoan civilization dates the attribution to poppies of symbolic meanings connected with rites of agricultural fertility. The persistence throughout antiquity of this symbolism is testified by literary and iconographic evidence of the attribution of poppies to goddesses of fertility, such as Demeter, Aphrodite, and Ceres.

POPPY DERIVATIVES

Food, Therapeutic, and Poison

Papaver somniferum, the white poppy, was known well before the rise of Greek civilization, and it would be difficult to prove that the cultivation of vine came before that of poppies. Traditionally, the discovery of poppies has been attributed to the early Mesopotamic civilizations and its supposed use was, of

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course, related to the psychotropic properties of the plant. However, robust arguments against this attribution have been provided by Krikorian (1975). The most compelling of these arguments is that "no seeds identifiable as those of the opium poppy have yet been found among the many plant materials uncovered in numerous important archeological 'digs' in the area concerned" (Krikorian, 1975, p. 113). In contrast, in a wide territory stretching from Spain to southern Germany, seeds of *Papaver setigerum*, the wild precursor of *somniferum*, have been found in Neolithic settlements (Schultze-Motel, 1979; Hammer, 1981). In some cases seeds were found amalgamated to form cakes. The most plausible interpretation of this finding is that seeds were pressed to extract in high quantity the edible oil they contain (up to 50–60%, see Renfrew, 1973). Certainly we can exclude the use of poppy seeds for psychopharmacologic reasons because they do not contain morphine (Trease and Evans, 1983). According to these archeological findings, we may therefore date an alimentary use that was certainly diffused among Greeks and Romans back to the Neolithic age (see Thucydides, 1953; Cato, 1954; Horace, 1955; Pliny, 1950 and Petronius, 1975). Here is a Roman recipe which includes poppy seeds: "Recipe for *gloi*: Mix the cheese and spelt in the same way, sufficient to make the number desired. Pour lard into a hot copper vessel and fry one or two at a time, turning them frequently with two rods, and remove when done. Spread with honey, sprinkle with poppy seeds, and serve" (Cato, 1954). According to Pliny (1950), the seeds of white poppy, were "roasted and served with honey as a second course; they are also sprinkled on the top crust of country loaves, an egg being poured on to make it stick, . . ."

During the early imperial age the cultivation of white poppies was probably diffused, even too much diffused, considering that Vergil (1916) admonishes that it could exhaust the land. Although the alimentary use of the seeds may be a reason sufficient to explain poppy cultivation, we have solid evidence that white poppies were also grown by Greeks and Romans for harvesting their juice, the *opion*. In Theofrastus (1949a) there is the first explicit description of this harvesting: "The collection of juice is made . . . from the head, as in the case of poppy; for this is the only plant which is so treated and this is its peculiarity." Four centuries later Pliny (1969) likewise described in detail how to collect opium from the white and black poppy, and in addition he described a poppy decoction: "When the heads themselves and the leaves are boiled down, the juice is called meconium, and is much weaker than opium."

Opium and meconium maintained a widespread therapeutic use across the Graeco-Roman civilization, from the Hippocratic Corpus to Saint Ambrose, and were included in imaginative pharmaceutical mixtures. One of the most popular mixtures was the so-called *teriaca*, a combination of scores of herbs which was mainly indicated as an antidote in poisoning (see, for instance, Galen, 1965).

However, it is not infrequent to come across an appropriate use of the analgesic, sedative-hypnotic and constipatic effects of opiates (see Scarborough, 1995). The sedative-hypnotic effects were particularly appreciated by physicians. A typical example is in Celsus (1971a) who contended that opium was very active in sedating the insanity (*phrenesis*) caused by fever. In this Celsus passage we may also appreciate the awareness of the dangerous contiguity between therapeutic and toxic effects of opium: "Asclepiades said that these things were of no benefit, because they often produced a change into lethargy" (1971b).

With regard to these toxic effects, an accurate description of an opium overdose is in Nicander (1953): "Learn further that when men drink the tears of the poppy, . . . they fall fast asleep; for their extremities are chilled; their eyes do not open but are bound quite motionless by their eyelids. With exhaustion an odorous sweat bathes all the body, turns the cheeks pale, and causes the lips to swell; the bonds of the jaw are relaxed, and through the throat the labored breath passes faint and chill. And often either the livid nail or wrinkled nostril is a harbinger of death; sometimes too the sunken eyes." The overdose was even an instrument of euthanasia: "Thrasyas of Mantineia had discovered, as he said, a poison which produces an easy and painless end; he used the juices of hemlock, poppy, and other such herbs, as compounded as to make a dose of conveniently small size, weighing only somewhat less than a quarter of an ounce. For the effects of this compound there is absolutely no cure, and it will keep any length of time without losing its virtue at all" (Theofrastus, 1949b). Some therapeutic procedures were suggested to rescue the patient from the overdose. In the case of those proposed by Pliny (1975), the attempt to induce vomit is implicit in the indication of ingesting salt mixed with vinegar and honey.

However, it is difficult to accept that poppy was only a source of food and therapeutics, and, in view of the present prevailing hedonic use of heroin, we may be tempted to attribute to the Ancients an interest for the pleasant effects of opium. This is quite an anachronism: there is no literary or iconographic evidence that the drug was ingested or smoked during symposia or in other recreational settings. Considering the redundant description of the modalities of drinking wine in the same settings, we may argue that this lack of evidence is not due to the fact that the topic was considered trivial. The most reasonable explanation for the lack of any description of poppy hedonic consumption is that the Ancients did not find this consumption hedonic at all.

Nevertheless, there is evidence of a nonmedical use of poppy psychotropic properties. Surprisingly, it appears that poppy derivatives were used mostly for ritual purposes.

The Ritual Use of Poppy

Poppy as a Symbol of Fertility

The ritual use of poppies is probably very old. The recent finding of a large number of poppy capsules in Neolithic burials located in a cave in the south of Spain (Cueva de los Murciélagos, Albuñol), and radiocarbon-dated to ca. 4200 B.C., suggests that during the Neolithic age ". . . poppy-heads had a symbolic significance beyond the simple use of their seeds as a source of food, and . . . this symbolism was particularly appropriate as an accompaniment for the dead" (Sherrat, 1991). Iconographic evidence of a ritual use of poppies is more recent, dating to the Minoan civilization which flourished in the eastern Mediterranean basin. To this civilization belongs the so-called Ghazi idol, a statuette representing a goddess bearing on her head three pins shaped as poppy heads (Fig. 1). The goddess has the dreamy expression of an opium eater, and the prevailing interpretation is that it pertained to a religious rite in which poppy derivatives were ingested or inhaled (a thorough review of archeological sources for the poppy and the Minoan civilization is found in Kritikos and Papadaki, 1967; see also Zervos, 1957). It may be that this rite had something to do with fertility, because an engraved seal on a ring found at Mycenae depicts the offering of three poppy heads to an enthroned goddess thought to be a propitiator of fertility (Mylonas, 1961).

There is no doubt that poppies were a symbol of agricultural fertility also for the later Greek civilization. In this way Theocritus (1950) described Demeter: "of her, to wit, upon whose cornheap I pray I may yet again plant the great purging-fan while she stands smiling by with wheatsheaves and poppies in either hand." And, according to Cornutus (1881), worshippers used to offer poppies to Demeter. The symbolic meaning of poppies was then adopted by the Roman culture, as clearly demonstrated by the representation of poppy heads close to the image of Ceres, the Roman equivalent of Demeter, in the so-called *Tellus'* relief of the *Ara Pacis Augustae* (Fig. 2) (Stanley Spaeth, 1994; Zanker, 1987).

It is not difficult to explain this symbolic association. It is widely accepted, to quote Eliade (1978a), that the religious creativity of Neolithic man "was stimulated, not *by the empirical phenomenon of agriculture*, but *by the mystery of birth, death, and rebirth* identified in the rhythm of vegetation." This rhythm is the essence of the mystery of vegetation, and "demands the 'death' of the seed to insure it a new birth, a birth all the more marvelous because accompanied by an astonishing multiplication" (Eliade, 1978a). Apart from providing numberless edible seeds, the poppy contains a juice that induces a deep, death-like sleep—from which one could, however, return. The agrarian rites had found in the poppy a unique symbol of birth, death, and rebirth. As

Fig. 1. The Minoan Gazi idol, a clay statuette of a goddess crowned with poppy heads.

such, it survived the collapse of the Minoan complex, the "Goddesses of Fertility and Death," and was maintained as an attribute of Demeter, the most ancient of the Greek goddesses, who "morphologically perpetuated the figures of the Great Goddesses of the Neolithic age" (Eliade, 1978b; see also Zuntz, 1971).

Fig. 2. Detail of the *Tellus'* relief of the *Ara Pacis Augustae* showing a maternal goddess (Ceres) with two babies. Ears of corn and poppies are the expected vegetal attributes of the goddess.

In view of this, it is not surprising that this symbolic use was extended to human fertility, and Aphrodite was also represented with poppies in her hands. Pausanias (1918) wrote: ". . . the image [of Aphrodite], which is seated . . . is made of gold and ivory, having on its head a *polos* [head-gear], and carrying

in one hand a poppy and in the other an apple." In the perspective of the use of poppies as a symbol of human fertility, we may understand the meaning of some puzzling allusions to these flowers in nuptial settings. For instance, in Ovid's *Fasti* (1931), poppy juice is drunk by Venus just before she is loved by her spouse: "Nor grudge to take poppy pounded with snowy milk and liquid honey squeezed from the comb; when Venus was first escorted to her eager spouse, she drank that drought: from that time she was a bride." And in Catullus (1956): "Now you may come, bridegroom; your wife is in the bridechamber, shining with flowery face, like a white daisy or yellow poppy." Even an obscure passage of Aristophane's *The Birds* (1950) makes sense if we consider poppy as a symbol of marital fertility. Describing the life of birds, one of the characters says: "Then in the gardens we enjoy the myrtles, the cress, the poppy, the white sesame" and the other answers: "Why, then, ye live a bridegroom's jolly life." In fact, sesame cakes were used at weddings, whereas myrtle and sisymbria were sacred to Aphrodite.

By an analogic process, the role of poppy in propitiating natural fertility was probably extended to social success. In this way one may interpret a Pliny passage (1968) in which the statue representing Success (*Boni Eventus*) is described as holding one ear and some poppies in the left hand.

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RESUMEN

Las adormideras se utilizaron ampliamente en la antigüedad como fuente de alimentos, fármacos y venenos. Posiblemente, el valor nutritivo de las semillas de la adormidera ya se conocía en el Neolítico, y hay indicios claros de una explotación de las propriedades neuropsicofarmacológicas del zumo de la adormidera durante la civilización minoica. A esta civilización se la puede además atribuir la identificación de la adormidera con significados simbólicos en los ritos de ferdilidad agraria. La atribución de la adormidera a diosas de la fertilidad, como Deméter. Afrodita y Ceres, atestigua la persistencia de este simbolismo a lo largo de la antigüedad.

RÉSUMÉ

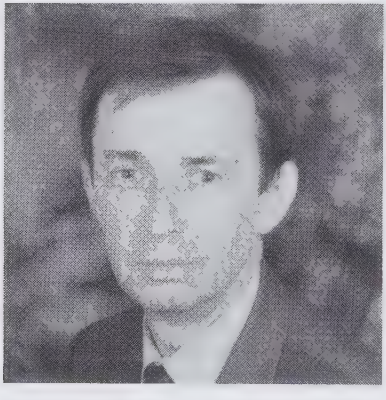
Les pavots furent largement utilisés dans l'antiquité comme source d'aliments, de médicaments et de poisons. Il est probable que la valeur alimentaire attribuée aux graines de pavot fût déjà connue á l'èpoque néolithique, alors qu'il existe d'importants indices de l'utilisation des propriétés neuropsychopharmacologiques du jus de pavot á l'apogée de la civilization minoenne. C'est à cette civilisation que l'on peut d'ailleurs attribuer l'association au pavot de significations symboliques dans la cadre de rites de fertilité agricole. La persistance à travers l'antiquité de ce symbolsme est témoignée par l'attribution du pavot à des déesses de la fertilité telles que Déméter, Aphrodite et Cèrès.

RIASSUNTO

I papaveri sono stati ampiamente usati durante l'antichità come fonte di cibo, di farmaci e di veleni. E' probabile che il valore alimentare dei semi di papavero fosse già noto nel Neolitico, mentre ci sono rilevanti indizi di uno sfruttamento delle proprietà neuropsicofarmacologiche del succo di papavero durante il fiorire della civilità Minoica. A questa civiltà si può inoltre far

risalire l'attribuzione al papavero di significati simbolici nell'ambito di riti di fertilità agricola. La persistenza attraverso l'antichità di questo simbolismo è testimoniata dalla attribuzione del papavero a dee della feretilità, quali Demetra, Afrodite e Cerere.

THE AUTHOR



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Research Note

A Prison-Based Alcohol Use Education Program: Evaluation of a Pilot Study

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ABSTRACT

Northern Territory prisoners were followed up after release to determine the effect of an alcohol education course on their alcohol consumption, drinking group, disruptive behavior, criminal activity, family relationships, how they use their time, general health, ability to cope and take responsibility. Measures were obtained both from prisoners and key informants, and two groups of prisoners were compared: those who completed the course and others who had not done the course. A high level of correspondence was found between measures from key informants and prisoners. The prisoners attending the course showed significant improvements on all dimensions when compared to the control subjects.

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INTRODUCTION

There is a recognized connection between alcohol use/misuse and crime, although the precise nature of the link needs further clarification (Hore, 1988; Yu and Williford, 1994; Greenfield and Weisner, 1995). An indisputable result of this relationship is that many prisoners are in jails and prison for alcohol-use-related offences, and many of those individuals actually have drinking problems which could benefit from interventions. While these problems may be sufficiently acute to require formal treatment, for others it may be enough for alcohol education courses to be provided (e.g., McMurran and Baldwin, 1989).

The Northern Territory is no exception to this situation. In 1991/92 three-quarters of sentenced prisoners reported that alcohol was a factor in their offending (Crundall, 1994). In response to this, a pilot education program has been set up in two Territory prisons. The program is an adapted version of the Ending Offending course (Baldwin et al., 1988). Originally designed for work with young offenders, the content and materials of the program have been translated to a prison population and, moreover, a prison population dominated by Aboriginal people—in 1994/95 more than 80% of sentenced prisoners were Aboriginal people (Department of Correctional Services, 1995).

The program aims to minimize alcohol-use-related harm by teaching people how to drink sensibly, and it highlights the connection between drinking and committing crime. The program is modeled on social learning principles, with drinking rather than the reasons or causes of drinking being the focus. The program is delivered through a structured course involving verbal and video presentations, small group discussions, and role plays in which prisoners act out the effect that their consumption of alcohol has on themselves and their victims. The course primarily targets the relationship between drinking behavior and imprisonment and how drinking can be altered.

While the first program staff were trained in the original Ending Offending package, that package was subsequently reviewed with the assistance of several older Aboriginal men from various communities who advised how it could be made more acceptable to traditional Aboriginal people. Various modifications resulted, ranging from the use of different language (e.g., plain English and the use of local Aboriginal expressions) through to having different methods of recording (e.g., counting drinks by tying knots in string rather than marking numbers on a piece of paper) and constructing groups in accordance with tribal and kinship rules. While these adjustments have been important for increasing program relevance to Aboriginal people, they have not detracted from the program still being an option for non-Aboriginal people.

While the evaluation of education courses has often been lacking (e.g., Gamba et al., 1989), the Territory program was planned with the expressed intention of assessing its impact. It would obviously be pointless to allocate scarce resources for ineffective measures. While individual sessions were monitored and the overall program was assessed by inmates once they had completed the course, participants were also followed up once they returned to their communities. Moreover, a number of prisoners who did not undertake the program were similarly followed up and were able to provide a comparison group.

This study assesses the apparent impact of the Ending Offending program delivered in the Northern Territory. The impact of the educational program is examined in terms of a number of behavior domains associated with alcohol use.

METHOD

Sample

Forty-five program participants were followed up, as were another 13 who did not undertake the program and were recruited as the control group. All subjects were male. Aboriginal people comprised all of the control subjects and 87% of the program subjects. The average age of the control group was 32.5 years and for the program group it was 27.7 years.

The majority of individuals in both groups came from the remote rural Aboriginal communities. Such communities are generally small in size, relatively isolated, and have limited amenities. They are scattered across the 1.3 million km^2 of the Territory and account for around two-thirds of the Aboriginal population. Traditional aspects of life, including ceremonies, hunting, kinship structures and the like, are practiced to some degree by Aboriginal members of both urban and remote communities.

To minimize the length of interviews and demands made of other data management systems, further personal details and offending histories were not accessed as part of this pilot study. However, to the extent that random selection produced a representative sample, it might be noted that latest figures on the overall prison population (Department of Correctional Services, 1995) show that more than half (57.3%) the prisoners are serving sentences of less than 12 months and that their most common crimes are assault (19%), break and enter (8.5%), illegal use of a motor vehicle (8.1%), driving under the influence of alcohol (10.8%), driving while disqualified (9.1%), and others related to justice procedures (11.7%).

Questionnaire

Two questionnaires were used to collect the data. One was used to obtain information from the prisoners themselves. The other was used with the Key Informants. Both were pretested with members of target populations to ensure that the format addressed cultural and language constraints and that questions and answers were properly understood.

The first part of each questionnaire identified the subject and obtained information about the period of time since he was released from prison, his age and Aboriginal status, whether he had attended Ending Offending or any other alcohol-use-intervention programs, and whether conditions relating to alcohol use were part of his release.

Nine dimensions were then listed and respondents were asked how much the subject had changed on each one when compared to the period before he was incarcerated. The dimensions were selected on the basis of areas directly related to the objectives of the Ending Offending program and other contingent behaviors.

Seven of the dimensions had a 5-point scale on which to indicate relative change, with the midpoint representing no change. Those dimensions referred to alcohol consumption, incidents of violent or disruptive behavior, quality of family relationships, general health, ability to cope (i.e., to deal with stress, frustration, etc.), being responsible, and amount of time spent in meaningful occupation. While employment could be related to this last dimension, the dimension was not restricted to employment (e.g., Aboriginal people might engage in more traditional activities).

Another dimension was assessed on a 3-point scale. It related to trouble with the law and allowed respondents to report "less trouble," "no change," or "more trouble." The last dimension was prompted by Aboriginal drinking often occurring in groups and it referred to the kind of drinking company kept by the subjects. Respondents could report "keeps more sober company," "drinks with more moderate drinkers," "keeps same company," or "drinks with big drinkers." A response alternative was also provided for people to record subjects who did not drink.

The self-report questionnaires did not seek any further information, but the Key Informants questionnaires had an added section in which they were to describe the nature of their relationship with the subject and the period of time that they had known the subject.

Procedure

Over a 12-month period, any prisoners who were within 6 weeks of release and known to have been incarcerated for alcohol-related offences were

invited to attend the Ending Offending program. Those wanting to participate were scheduled into the program. A small number of participants were self-referred.

Prisoners were allocated to programs according to a range of factors that included usual place of residence, type of offense, age, and cultural imperatives (e.g., the lore of Aboriginal relationships means some people cannot associate together). Each program required the prisoner to complete a total of five 2-hour sessions.

Upon completing the program, each prisoner was asked by the program staff whether he would be willing to be followed up after returning to his community. It was explained that the follow up was looking at how the program contributes to integration back into the community and that all personal information would be confidential. Only two individuals refused follow up, both of whom completed the program. The arrangements necessary to undertake the follow up of the others were then investigated, and negotiations begun about who would do the interviews and contact Key Informants. It was the responsibility of the program staff to brief all likely interviewers about the study and how to administer the questionnaires.

Approximately 6 weeks after release, local Corrections officers were advised that a follow-up interview was required and they then had to locate the relevant subject. When Corrections officers were not available, contact was made with local community councils. Locating subjects often proved more difficult than expected, and the actual time of interview was generally after several more weeks.

Once a subject was located, a convenient time was arranged for the interview to take place. To minimize collusion, the Key Informant interview was organized to occur independently but at about the same time. Interviews took no longer than 10 minutes to complete.

Control subjects were selected in the period prior to the Ending Offending program being tried in the prison. Local communities known to have persons recently released from prison were contacted and advised of the need for volunteers. The value of the control group and the implications of the study for providing additional services were emphasized. As many control subjects as possible were located and interviewed before the trial period ended.

All completed questionnaires were forwarded to a central site to be coded, entered on computer, and then analyzed using SPSS procedures (Norusis, 1992).

RESULTS

Group Characteristics

On average, data were collected about subjects three and a half months after their release. There was no difference between program or control sub-

jects in this respect ($t = .27$, $df = 56$, $p = .79$), nor was there any difference in the number released on conditional liberty or parole orders ($\chi^2 = .217$, $df = 1$, $p = .64$) or the number who had attended other alcohol programs ($\chi^2 = .143$, $df = 1$, $p = .704$). Only one control subject and two of the program subjects were on parole and had alcohol conditions attached—the majority were prisoners who had served full sentences. Only one control subject and five program subjects had attended other programs.

The distribution of Aboriginal people across the two groups was not statistically significant ($\chi^2 = 1.933$, $df = 1$, $p = .164$), but the age differential between the groups was significant ($t = 2.30$, $df = 54$, $p = .025$). On average, the control group was older by 4.7 years.

Collateral Reports

Collateral reports were obtained for all program subjects, but self-reports were only obtained from 88.9%. Among the control subjects, 61% provided self-reports, and measures for the remainder all came from Key Informants.

A variety of people were accessed as Key Informants. The majority (52.9%) were Correctional Services community-based staff (i.e., Aboriginal Community Correctional Officers, Probation and Parole Officers), 38.6% were relatives, and the remainder were friends or counselors. Lifetime associations with the prisoners were reported by 28.5% of the Key Informants, while the median time of contact for the others was around 3 years.

The two sets of data collected from the subjects and their associated Key Informants were analyzed by Wilcoxon matched pair tests. No significant differences were found on any of the nine dimensions. Table 1 shows that the ratings from both sources were similar, although there was a tendency for the

Table 1.

Average Ratings from Prisoners and Key Informants[a]

Dimension	*n*	Prisoner	Key Informant
Alcohol consumption	39	1.90	1.79
Violent/disruptive behavior	39	1.72	1.72
Trouble with the law	40	1.20	1.13
Family relationships	40	1.55	1.65
Drinking group	38	1.63	1.55
Time spent meaningfully occupied	37	1.86	1.89
General health	37	2.14	1.81
Ability to cope	38	1.95	1.84
Being responsible	39	1.59	1.59

[a]Lower ratings indicate more positive outcomes.

prisoners to be more conservative than the Key Informants in rating how they had changed. These findings increase confidence in the reliability and accuracy of the assessments made by individuals.

Program Impact

To assess the impact of program, the average rating was calculated from the two sets of measures provided for subjects who had both self-report and Key Informant data. The other subjects only used the one set of measures that was obtained.

Differences between the two groups were analyzed by Mann–Whitney tests. As shown in Table 2, the groups were significantly different on all nine measures. The program group reported more positive outcomes for all nine dimensions.

On average, the program group registered improvements on all dimensions inasmuch as the ratings were above the midpoint of each scale. Alternatively, the control group showed decrements in terms of alcohol consumption, drinking group, being meaningfully occupied, and general health. Since leaving prison they tended to be drinking more, drinking with others who drink more, spending less time meaningfully occupied, and, further, their general health tended to be worse.

DISCUSSION

The impact of the Ending Offending program adapted to Northern Territory prisons is impressive and encouraging. The results demonstrate a range of improvements in program participants that was not evident among prison-

Table 2.

Average Ratings from Program and Control Groups and Statistical Significance of Difference[a]

Dimension	Program	Control	*p* value
Alcohol consumption	2.09	3.15	.012
Violent/disruptive behavior	1.75	2.77	.002
Trouble with the law	1.19	1.77	.036
Family relationships	1.67	2.62	<.001
Drinking group	1.69	2.50	.003
Time spent meaningfully occupied	2.06	3.15	<.001
General health	1.88	3.15	<.001
Ability to cope	2.04	2.77	.007
Being responsible	1.69	2.38	.018

[a]Lower ratings indicate more positive outcomes.

ers who had not had access to the course. While the findings are necessarily qualified by the use of self-reported measures, this caveat is offset by the convergent validity provided by the collateral reports that were obtained. Overall, it appears that the alcohol education course offered prisoners something of benefit.

It is apparent that involvement in the course influenced more than just the drinking and offending behaviors of the prisoners surveyed. There were also indirect gains in terms of health, personal dispositions, relationships, and so on. While these broader dimensions probably relate to drinking or offending (e.g., health improves if drinking decreases, improved coping reduces the likelihood of criminal behavior), the observed changes may also reflect a general responsiveness to a program within a prison setting. Despite the high degree of alcohol use among offenders in the Territory, education programs have not previously been a priority. Simply providing some form of assistance and instruction and giving attention to inmates might be sufficient to stimulate a commitment to change.

The limited nature of this pilot study means that the results are somewhat preliminary and await further research. Using larger samples and developing more sophisticated instruments that allow for detailed and standardized measures to be collected in a culturally sensitive way will help to clarify and refine the impact of the program. Having a design which allows for comparative pre-program measures to be taken as well suggests advantages over relying on retrospective questions too. Extending follow up over longer periods of time would also help identify factors that either contribute to recidivism rates or work to maintain improved behaviors. Indeed, even within the time frame that occurred in this study, more attention could be given to post-release influences that might assist or hinder the outcomes achieved by individuals. Collecting more personal details about the prisoners and examining how they correlate with outcomes could be fruitful in this regard too.

In the meantime it appears that the modified Ending Offending program offers a viable foundation on which to build other strategies and interventions. For example, consideration is being given to extending the program into community settings. This might be in the form of supporting self-help groups with additional resources or training, such that an ex-prisoner can link up with previous program participants when he returns to his community and together they can assist one another to maintain skills and knowledge so that sensible drinking patterns are further encouraged. On the other hand, a variety of community members might be trained in the delivery of the program and community-based groups could then be formed to support released prisoners or to offer an alternative to prison in the sentencing process, especially with home detention orders and community service orders in operation for the many mi-

nor offences that occur. Of course, there is also a value in having such groups as part of a prevention strategy.

Clearly, the pilot program has made a positive contribution to the education and rehabilitation process. With increased community awareness and support of the program, the Territory has a good chance of diminishing the nexus between alcohol and offending.

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RESUMEN

Los prisioneros del Territorio del Norte fueron objeto de seguimiento una vez salidos de prisión a fin de determinar el efecto del curso de educación sobre el alcohol en su consumo de bebidas alcohólicas, grupo de bebida, conducta perturbadora, actividad delincuente, relaciones familiares, uso del tiempo, estado general de salud, habilidad para enfrentarse a la vida y aceptación de responsabilidades. Se tomaron datos tanto de los prisioneros como de

informantes clave, y se compararon dos grupos de prisioneros, a saber: aquellos que finalizaron el curso y los que no hicieron el curso. Se encontró un alto grado de correspondencia entre los datos de los informantes clave y de los prisioneros. Los prisioneros que concurrieron al curso mostraron mejorías significativas en todas las dimensiones cuando se los comparó con los sujetos testigo.

RÉSUMÉ

Des détenus du Territoire du Nord furent suivis après leur remise en liberté efin de déterminer les effets qu'un cours d'éducation sur l'alcool aura eu sur les points suivants: leur consommation d'alcool, leur groups d'amis buveurs, leur conduite perturbatrice, leur activité criminelle, leurs relations familiales, la manière dont ils utilisent leur temps, leur état général de santé, leur capacité à faire face à leurs responsabilités et à leus prendre. Des évaluations furent obtenues aussi blen des prisonniers que d'informateurs defs et deux groupes de prisonnies furent, comparés: ceux qui suivirent le cours et d'autres qui ne l'avaient pas suivi. Il y eut beaucoup de correspondence entre les différentes évaluations en provenance des informateurs defs et des détenus. Les détenus ayant suivi le cours firent montre d'une nette amélioration sur tous les points comparativement aux sujets du groupe de contrôle.

THE AUTHORS

Ian Crundall is a social psychologist who has worked in the alcohol and other drugs field since receiving his Ph.D. from LaTrobe University in 1985. For the last three years he has been Research and Evaluation Co-ordinator with the innovative Northern Territory Living With Alcohol Program. This has involved him in a range of projects relating specifically to alcohol use and a diversity of strategies aimed at reducing associated harm across the community.

Kaye Deacon is the Manager of Prison Alcohol Programs, Northern Territory Correctional Services. She is an addictions counselor and has been involved in a variety of cross-cultural alcohol programs for more than a decade. Since 1991 she has focused on developing different alcohol programs within prison and community settings in the Territory, with particular attention being given to adapting the Ending Offending Program to the unique needs of the Territory.

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Research Note

Abstinence Fear in Methadone Maintenance Withdrawal: A Possible Obstacle for Getting off Methadone

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ABSTRACT

The present study attempts to shed light on methadone maintenance patients expectations regarding withdrawal symptoms during voluntary methadone detoxification. The study includes two groups of subjects; one group who have tried on their own initiative to terminate their methadone maintenance treatment (Group 1) and one group that contains rehabilitated patients who have not tried to quit using methadone (Group 2). Two main results have emerged. Group 1 has negative expectations beforehand about the intensity of withdrawal which significantly exceed the later, actual experience. Group 2 has negative expectations about the intensity of withdrawal that significantly exceed the negative expectations of Group 1. The clinical implications of these results are discussed.

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Key words. Methadone maintenance treatment; Withdrawal; Abstinence fear

INTRODUCTION

In another article, Eklund et al. (submitted) describe a variety of withdrawal symptoms experienced by methadone patients during voluntary gradual methadone withdrawal. They found that the psychological withdrawal symptoms (anxiety, depression, etc.) were perceived as more discomforting than the physiological symptoms (excessive sweating, yawning, etc.). Other studies have also suggested that the sorts of symptoms which are most distressing to addicts are, in fact, psychological symptoms rather than the more physiological symptoms associated with the withdrawal syndrome (Cohen et al., 1983). Kleber (1981) observed that psychological factors play a major role in the opiate withdrawal syndrome; in particular, he showed that the addict's expectations about withdrawal are strongly related to the maximum level of withdrawal distress subsequently experienced during detoxification. Phillips et al. (1986) studied a group of opiate addicts being detoxified as inpatients on a graduated oral methadone reduction schedule. They found that two variables were significantly related to the intensity of the opiate withdrawal syndrome: neuroticism and the level of withdrawal distress expected. Green and Gossop (1988) say that both of these measures can be seen in broad terms as being anxiety-related and that the results suggest that the more frightened of withdrawal the addict is, the more discomfort he or she is likely to experience during withdrawal. In a study by Hall et al. (1984), it was found that initial anxiety over detoxification was related to minimal dose reduction and that detoxification-related anxiety increased as dose decreased.

More than twenty years have now passed since Paynard and Wolfe (1974) described that anxiety reactions to methadone detoxification can be so severe and unrealistic that they fit the classical definition of a phobia and interfere with successful detoxification. They said that patient fear and psychosomatic responses during withdrawal from methadone represent enormous obstacles. Paynard and Wolfe (1974) treated the patients' exaggerated fear by the use of systematic desensitization (Wolpe, 1969). Other treatment methods that have been tried in this context have included implosive therapy (Hirt and Greenfield, 1979), eclectic counseling (Hirt and Greenfield, 1979), and different forms of anxiety reduction techniques in which cognitive and situational factors are attended to (Hall et al., 1984).

Since Paynard and Wolfe's article (1974), a series of authors have described the same phenomenon, which has been variously referred to as, for example: abstinence phobia (Hall, 1979), phobic avoidance behavior (Hirt and

Greenfield, 1979), negative expectancy (Senay et al., 1977), detoxification phobia (Milby et al., 1980), and detoxification fear (Milby et al., 1986). Milby et al. (1980) describe "iatrogenic detoxification phobia" as a new diagnostic category; "iatrogenic" because the irrational, unrealistic fear seems to have been acquired during the methadone maintenance treatment. The incidence of the fear described here appears to range from 22 to 35% of addicts in treatment (Milby et al., 1986) and the phenomenon has been noted to interfere with detoxification from methadone (Hall et al., 1984; Paynard and Wolfe, 1974; Cushman and Dole, 1973). A lot of data, for example the review by Milby (1988), reveal that only a small number of those who attempt to detoxify from methadone maintenance programs will be successful. Different kinds of fears in conjunction with the detoxification process have been postulated to be one reason among others for detoxification not being more efficacious. For example, the data of Gentile and Milby (1992) revealed three fear components in methadone maintenance detoxification fear: fear of relapse, fear of AIDS, and fear of withdrawal symptoms.

The present article attempts to study different groups of methadone patients and their expectations regarding the intensity of withdrawal symptoms during voluntary methadone detoxification. One group of patients' actual perceptions of the intensity of the withdrawal symptoms during detoxification is considered in relation to their expectations beforehand. The study also attempts to shed light on how negative expectations concerning withdrawal symptoms may influence decisions concerning voluntary methadone detoxification.

METHODOLOGY

Subjects

The study presented in this article includes two groups of subjects. Group 1 contains seven male and three female methadone patients who have tried on their own initiative to terminate their methadone maintenance treatment (MMT) with the goal of leading opiate-free lives. They are consecutive cases between January 1989 and February 1991, i.e., the first subject started his methadone withdrawal attempt (WA) in January 1989. However, one subject had to be excluded due to an excessively high waiting failure rate and was replaced with a new subject who started her WA in April 1993. The mean age of the 10 subjects at start of WA was 38 years at which time they had participated in MMT for an average of 10.5 years. The majority of the subjects had participated in MMT for a long time. All subjects but one were judged to have been functioning well for many years; they were working or studying and had exhibited a social and drug-related stability for several years. The latter was documented by the results of regularly submitted urine samples. Group 2 in-

cludes seven male and three female methadone patients who have not tried to quit using methadone. This group was selected from the population of all methadone patients in Stockholm, excluding those infected with HIV. With the aid of the patients' different doctors and social caseworkers, the most well-functioning and stable patients (with regard to drug use, social compliance, etc.) were identified. As a result of this selection process, 35 particularly well-functioning patients were identified. Nine of these 35 patients were identical with the patients in Group 1, i.e., those who made attempts to terminate methadone treatment. Of the remaining 26, 10 persons were matched to the patients in Group 1 on the variables of sex, age, and duration of MMT, and these were designated Group 2, i.e., each person in Group 1 was assigned a "twin" (on the three matching variables) in Group 2. All the subjects in this study, who belong to the methadone project in Stockholm, participated in the study voluntarily. No patient who was asked to participate refused. The information that was given had to do with the survey's target groups and purpose, confidentiality, and financial compensation. The data collection was conducted during spring 1992. Group 1 were offered USD 80 and Group 2 USD 50, which is roughly equal to normal day's pay in Sweden. All the information and data collection was conducted by the first author. See further Table 1, which pre-

Table 1.

Selected Social, Occupational, MMT, and Substance Use Data for the Two Groups

	Group 1	Group 2
Age (mean, range)	38 (32–43)	39 (32–45)
Sex (male/female)	7/3	7/3
Marital status (cohabiting/alone)	7/3	6/4
Children (yes/no)	2/8	3/7
Main income source (steady work/temporary work/education/social welfare assistance)	6/1/2/1	5/0/3/2
HIV (yes/no)	1/9	0/10
Years in MMT (mean, range)	10.5 (1–18)	11.6 (1–20)
Age of first opiate use (mean, range)	17.8 (16–23)	18 (15–29)
Substance use:[a]		
Opiates (none/less than once a week/once a week or more)	8/2/0	7/3/0
Amphetamines	8/2/0	9/1/0
Cocaine	10/0/0	9/1/0
Cannabis	9/0/1	8/2/0
Hypnotic-sedatives	9/1/0	5/2/3
Hallucinogens	10/0/0	10/0/0
Alcohol	1/7/2	1/3/6

[a]The substance use considers the subject's drug habits the year before the data collection.

sents some social, occupational, MMT, and substance use history data for the two groups.

Procedure

Just before the subjects in Group 1 started their methadone withdrawal attempts (WAs), or right at the beginning of them, they were asked how intensively they believed they would perceive a variety of withdrawal symptoms when the withdrawal symptom was at its worst (predicted values). The patients were then instructed during ongoing dose reduction to make ratings of the intensity of the different symptoms experienced on each dose reduction occasion (experienced values). All the ratings were made on a visual analogous scale (VAS) from 0 to 100 where 0 = none and 100 = maximum. The symptoms were divided into 12 physiological (excessive sweating, yawning, general physical malaise, goose bumps, spontaneous twitching of muscles, chills, vomiting, diarrhea, cramps, craving for opiates, muscular aches, and loss of appetite) and 12 psychological symptoms (anxiety, depression, apathy, sleeping disturbances, restlessness, lack of initiative, stress sensitivity, aggression, fatigue, irritability, difficulty concentrating, and insecurity). The selection of these variables was based in part on previous clinical observations at our methadone clinic and in part on descriptions of withdrawal states recorded in the literature (e.g., Cohen et al., 1983; Hall et al., 1984; Milby, 1988; Handelsman et al., 1987; Loimer et al., 1989; Charney et al., 1982). The 10 subjects in Group 2 were instructed to make the same ratings of symptoms as Group 1 in response to the question: If you were to undergo gradual methadone withdrawal, with what intensity do you think you would experience the following (24) symptoms?

Reliability Testing of Data

As we have seen, the subjects in both groups were asked to make predictions of how intensively they believed they would experience 24 different withdrawal symptoms during gradual methadone detoxification. They were asked to make this rating on a VAS (0–100). The subjects were also asked whether they believed they would experience each symptom to any degree at all, answering yes or no. This question and the VAS rating were separated chronologically in the interview situation. An attempt was made to test the quality of measurement (the reliability of the interview data) by comparing the results of the visual analogue scale tests with the responses to the question.

Statistics

The difference (if any) between the two ratings (beforehand versus during withdrawal) of symptom severity in Group 1 was analyzed by ANOVA (randomized-block-factorial design, Kirk, 1968). Comparison of beforehand ratings of symptom severity before Group 1 and Group 2 was also carried out by ANOVA (split-plot design, Kirk, 1968). Paired post-hoc comparisons between mean values were made by means of Student's *t*-test in both cases. The reliability of the data was tested by point biserial correlation (Walsh, 1990).

RESULTS

In the presentation of the results, the predictions of the 10 patients in Group 1 as to how they believed they would experience withdrawal symptoms during gradual methadone detoxification are presented first, and then how they—during ongoing dose reduction—rated the actual outcome (Fig. 1). The expectations of the 10 methadone patients in Group 2, who have not undergone any WA regarding withdrawal distress, are reported in relation to the expectations of the subjects in Group 1 (Fig. 2). The predicted values for Group 1 and Group 2 regarding the individual physiological symptoms are presented in Table 2.

Comparison between Expectations (prediction) and Subsequent Actual Perception (experience) of Withdrawal Distress

Figure 1 shows the results for the aggregate physiological symptoms and the aggregate psychological symptoms. The cross-hatched bars (prediction) correspond to the ratings made by Group 1 beforehand, while the white bars (experience) represent the "actual" highest rated value during withdrawal. As can be seen, the subjects' expected value exceeds the value later actually perceived for both the physiological and the psychological symptoms. In the case of the physiological symptoms, statistical analyses showed a significant main effect for the time factor for Group 1 [$F(1,207) = 25.36$, $p < .0001$]. Regarding the item factor, i.e., the factor that measures the individual symptoms [$F(11,207) = 6.47$, $p > .05$], and the interaction [$F(11,207) = 1.57$, $p > .05$], no significant main effects could be demonstrated. As regards the psychological symptoms, analyses showed a significant main effect for the time factor [$F(1,207) = 14.6$, $p < .0002$]. The factor that measures the individual items also showed a significant main effect [$F(11,207) = 4.17$, $p < .0001$]. The interaction between these main effects was not significant, however ($p > .05$).

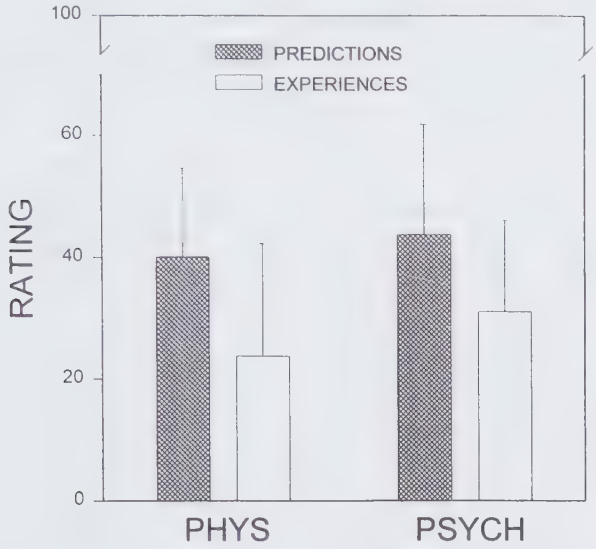

Fig. 1. Comparison between predictions and experiences concerning intensity of the aggregated physiological symptoms and the aggregated psychological symptoms for Group 1.

Comparison Regarding Expectations of Withdrawal Distress between Groups 1 and 2

In Fig. 2, the cross-hatched bars show the expectations the patients in Group 1 have regarding the intensity of the withdrawal symptoms, while the white bars show the same for Group 2. We can thus conclude that Group 2 expects to experience greater withdrawal distress during methadone detoxification than Group 1. As regards the physiological symptoms, statistical analyses show a significant main effect for both the group factor [$F(1,18) = 29.10$, $p < .0001$] and the item factor [$F(11,198) = 11.14$, $p < .0001$]. The interaction of these factors was also significant [$F(11,198) = 2.36$, $p < .01$]. The post-hoc comparisons performed (see Table 2) show that significant differences exist for nine of the twelve symptoms studied. As regards the psychological symptoms, the analyses showed a significant main effect for both the group factor [$F(1,18) = 14.10$, $p < .01$] and the item factor [$F(11,198) = 8.97$, $p < .0001$]. The interaction of these main effects was not significant, however ($p > .05$).

The reliability testing of data from both groups that was done by comparing the results of the VAS tests with the responses to the question of whether the subjects expected to experience the different withdrawal symptoms showed

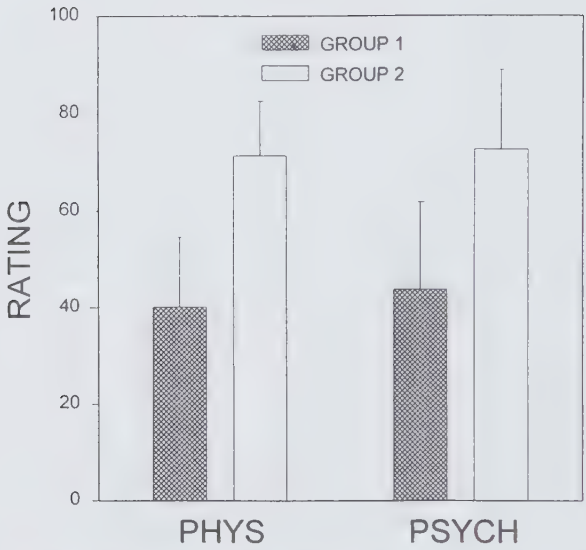

Fig. 2. Comparison between Group 1 and Group 2 regarding predictions of intensity of the aggregated physiological symptoms and the aggregated psychological symptoms.

Table 2.

Comparison between Group 1 and Group 2 Regarding Mean Predicted Values for the Physiological Symptoms

Physiological symptoms	Group 1	Group 2	*t*
Excessive sweating	66 ± 28.7[a]	75 ± 15.8[a]	0.87
Yawning	42 ± 28.6	69 ± 15.9	2.61**
General physical malaise	59 ± 26.4	83 ± 20	2.29*
Goose bumps	46 ± 27.6	72 ± 20.4	2.39*
Spontaneous twitching of muscles	9 ± 11	67 ± 19.5	8.20***
Chills	31 ± 23.3	69 ± 23.8	3.61**
Vomiting	28 ± 31.5	78 ± 19.9	4.24***
Diarrhea	67 ± 31.6	82 ± 16.2	1.33
Cramps	10 ± 20	46 ± 37.2	2.69**
Craving for opiates	25 ± 20.7	41 ± 29.9	1.39
Muscular aches	43 ± 33.7	86 ± 14.3	3.72**
Loss of appetite	55 ± 26.3	89 ± 15.9	3.49**

[a]Mean ± SD.
*$p < .05$.
**$p < .01$.
***$p < .001$.

significant correlations for both the physiological ($r = 0.59$, $p < .01$) and the psychological ($r = 0.54$, $p < .01$) items.

DISCUSSION

The purpose of this study was twofold: 1) to compare patients' prediction of the intensity of withdrawal symptoms with the actual distress subsequently experienced during voluntary methadone withdrawal, and 2) to compare expectations concerning withdrawal distress between patients who make WAs with those who do not make WAs. Two main results have thereby emerged. One is that methadone patients who try to quit methadone maintenance treatment have negative expectations beforehand about the intensity of withdrawal which significantly exceed the later, actual experience (Fig. 1). The second is that methadone patients who do not plan to make a WA have negative expectations about the intensity of withdrawal that significantly exceed the negative expectations of the withdrawal patients (Fig. 2). These two results will be commented on and their implications for clinical practice will be discussed in the following. As mentioned earlier, Group 2 answered the question: If you were to undergo methadone withdrawal, with what intensity do you think you would experience the different symptoms? None of the 10 subjects reported any difficulties imagining this hypothetical situation. Despite this, we would recommend some caution in the interpretation of the results due to the hypothetic matter of the question.

Harboring fear and anxiety for the discomfort associated with detoxification, regardless of what type of drug is involved, is of course natural. The fact that this fear is even exaggerated slightly by the patients may also appear natural. They have, for example, been through previous unpleasant detoxifications, and in that sense the fear is reality-based. The question is: at which point does this fear change character from being "normal" to being a pathological fear whose treatment is an important and indeed requisite step in enabling the rehabilitated methadone patient to initiate and complete detoxification. For example, the data of Milby et al. (1986) confirm the notion that pathological fear of detoxification is reliably discriminable from the typical mild anxiety most addicts show in response to detoxification. The authors conceptualize detoxification fear as a continuum which has no or little anxiety with acceptance of withdrawal symptoms as a temporary discomfort at one extreme and a true phobic disorder with avoidance and escape behavior at the other extreme.

One of the two main results in this study—namely that MMT patients' prediction of the intensity of the withdrawal symptoms significantly exceeds the actual, later experience—has significant clinical implications. As noted in the Introduction, many authors have stated that alleviation of detoxification fear

may enable more patients to complete detoxification successfully. The rationale behind this statement is that exaggerated negative expectations are an important variable in producing symptoms of withdrawal from methadone (Senay et al., 1981). Kleber (1981) showed that the addict's expectations regarding withdrawal are strongly related to the maximum level of withdrawal distress subsequently experienced during detoxification. The other main result—that the group of rehabilitated MMT patients who have not made WAs have significantly higher predictions of withdrawal distress than the corresponding group who make WAs—also naturally has important implications. More realistic expectations of withdrawal symptoms may enable the patients to initiate WA. Milby et al. (1980) suggested that a significant number of patients who continue taking methadone long after rehabilitation goals have been met do so because they have a morbid and unrealistic fear of detoxification. The 10 patients in Group 2 were selected because they were particularly well-functioning and furthermore matched (for sex, age, duration in MMT) to Group 1 and can in that sense be said to be "twins" of the patients in Group 1. All of them can be said to fulfill the criteria used by Milby et al. (1980) for diagnosing rehabilitated methadone patients. Put another way: they ought to have come to the decision to try to quit methadone. The significantly higher rated values in Group 2 may indicate that a higher degree of detoxification fear is an important reason why they put off this decision. There is therefore an even greater reason to target this group for measures aimed at reducing fear. All patients in Group 2 also stated, when asked, that they would really like to terminate MMT.

Of course, the problem presented here is not the only obstacle to getting off methadone. For example, Zweben and Sorensen (1988) pointed to a number of factors of a psychosocial, biological, and biochemical nature that represent possible obstacles in this context, but most of these factors cannot be successfully treated in the same relatively simple way as exaggerated fear. Twenty years ago, Lowinson et al. (1976) stated that it is a good idea to have a separate clinic for patients undergoing detoxification, with a carefully selected staff and ex-addict counselors who have completed detoxification. Milby et al. (1980) said that identification and treatment of fear such as is described here requires someone on the staff who has the training and skills necessary to conduct behavioral analysis and to carry out behavioral therapy.

In 1995, a special methadone maintenance treatment unit (The Stair) for withdrawal patients, aimed at an opiate-free life, was started in the methadone maintenance program in Stockholm. The target group is those patients who have come so far in their treatment that all that remains is termination. The unit has all the qualities mentioned above, including the fact that former methadone patients are available as an extra resource. The unit is also supposed to

cooperate with the maintenance team to improve efforts to motivate rehabilitated patients who have not yet made a commitment to terminate MMT (cf. Group 2 in this article). Research will be conducted, and at present a study is planned on treatment strategies for alleviating detoxification fear. We believe that not only do diagnosed phobics stand to benefit from such treatment, but also in principle do all rehabilitated patients who desire to terminate methadone maintenance treatment for an opiate-free life. Since the program in Stockholm (and Sweden) is very small by international standards, as was the target group, this is a fully realistic goal.

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RESUMEN

El presente estudio pretende esclarecer las expectativas de pacientes en mantenimiento con metadona respecto a los síntomas de inhibición durante la desintoxicación voluntaria de metadona. El estudio comprende dos grupos de individuos; una de los que han intentado por propia iniciativa suspender su tratamiento de mantenimiento con metadona (Grupo 1), y otro que abarca pacientes rehabilitados que no han intentado dejar de usar metadona (Grupo 2). Se han deducido dos resultados fundamentales. Los del Grupo 1 tienen de antemano unas expectativas negativas sobre la intensidad de la inhibición notablemente a las posteriores experiencias efectivas. Los del Grupo 2 tienen unas expectativas negativas sobre la intensidad de la inhibición que sobrepasan notablemente las negativas del Grupo 1. Se discuten las implicaciones clínicas de dichos resultados.

RÉSUMÉ

Cette étude cherche à mettre en lumière les attentes des patients sous traitement de maintenance à la méthadone quant aux symptômes d'abstinence pendant la suppression volontaire de la méthadone. L'étude porte sur deux groupes: un groupe de sujets ayant essayé de leur propre initiative de mettre fin à leur traitement de maintenance à la méthadone (Groupe 1), et un groupe de patients réadaptés n'ayant pas essayé de cesser l'usage de la méthadone (Groupe 2).

Deux résultats principaux apparaissent. Les patients du Groupe 1 avaient au préalable des attentes négatives quant à l'intensité des symptômes d'abstinence, attentes qui exécdaient notablement l'expérience vécue ultérieurement Les patients du Groupe 2 avaient des attentes négatives quant à l'intensité des symptômes d'abstinence qui dépassaient notablement les attentes négatives du Groupe 1. L'étude examine les implications cliniques de ces résultats.

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DESCRIPTIONS: Include as much background material as possible to help a reader have a sense of *person* regarding sample members: age, gender, ethnicity, religion, religious involvement, environmental background (urban, suburban, rural), status (educational, vocational, profession/job, employment, sources of income (legal/illegal), SEC, marital, gender preference, current living arrangements (domiciled, type of homelessness), medical (general and HIV, psychiatric), substance use history (types used, initial age(s), total time using, pattern(s) of use, manner of use, "significant others" using), treatment history (type(s), initial age(s), outcomes(s)), involvement with law history (type of crimes committed, initial ages, outcomes (arrests, fines, incarcerations, parole, adjudicated treatment), abuse history (initial age(s), until age, by whom, where, type intervention, if any and by whom), samples are not simply random or convenience captive passive data sources. Data collectors and/or intervention agents need to be described as *people* for the reader: age, gender, ethnicity, discipline, training, experience, etc. If at all feasible photographs can be included. The environments (community, neighborhood, street, program, etc.) in which the activity being reported in your article should be described to give the reader a sense of its essence. Photographs, line drawings, etc. are desirable.

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